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INTERNATIONAL

CATALOGUE OF SCIENTIFIC LITERATURE

ROYAL SOCIETY OF LONDON.

International Catalogue of Scientific Literature.

(A.) PURE MATHEMATICS.

*0000 Philosophy.
0010 History. Biography.
0020 Periodicals. Reports of Institutions, Societies, Congresses, etc.
0030 General and Special Treatises, Text Books, Dictionaries, Bibliographies, Tables of Constants or Data.
0040 Addresses, Lectures, Essays, Dissertations.
0050 Pedagogy.
0060 Institutions, Museums, Collections, Economics.
0070 Nomenclature.
0080 Instruments. Models.
0090 Aids to Calculation, Graphical Processes.

FUNDAMENTAL NOTIONS.

Foundations of Arithmetic.

0400 General.
0410 Rational numbers; arithmetical operations.
0420 Existence of irrational and transcendent numbers; infinite processes adapted to rational numbers.
0430 Aggregates.

Universal Algebra.

0800 General.
0810 Calculus of Operations.
0820 General theory of complex numbers.
0830 Quaternions.
0840 Ausdehnungslehre; vector-analysis. (*See* also 6430.)
0850 Matrices.
0860 Other special sorts of complex numbers.

Theory of Groups.

1200 General.
1210 Discrete groups of finite order (including groups of permutations). (*See* also 2450.)
1220 Discrete groups of infinite order. (*See* also 4440.)
1230 Continuous groups of finite order. (*See* also 5240.)
1240 Continuous groups of infinite order. (*See* also 5240.)

* The headings under Nos. 0000-0070 are common to all subjects.

ALGEBRA AND THEORY OF NUMBERS.

Elements of Algebra.

1600 General.
1610 Rational polynomials; divisibility; reducibility.
1620 Permutations, combinations, partitions, distributions.
1630 Probabilities (including combination of observations).
1640 Calculus of differences; interpolation.

Linear Substitutions.

2000 General.
2010 Determinants.
2020 Discriminants and resultants.
2030 Characteristic properties of linear substitutions: types of linear substitutions.
2040 General theory of quantics.
2050 Binary forms.
2060 Ternary forms.
2070 Special developments associated with forms in more than three variables.

Theory of Algebraic Equations.

2400 General.
2410 Elements of the theory; existence of roots; symmetric functions; rational fractions.
2420 Reality, multiplicity, separation, of roots.
2430 Equations of the third and the fourth orders: other particular equations.
2440 Numerical solution of equations.
2450 General resolution of equations; theory of Galois. (*See* also 1210.)
2460 Simultaneous equations.

Theory of Numbers.

2800 General.
2810 Divisibility; linear congruences
2820 Quadratic residues.
2830 Quadratic binary forms.
2840 Quadratic forms of three or more variables; bilinear forms.
2850 Congruences other than linear; cubic and higher residues.
2860 Forms of higher degree which cannot be considered as products of linear factors.
2870 Forms of higher degree which can be considered as products of linear factors; algebraic numbers; ideals.
2880 Application of trigonometrical functions to arithmetic; cyclotomy.

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2890 Application of other transcendental functions to arithmetic.
2900 Distribution of prime numbers.
2910 Special numerical functions.
2920 Irrationality and transcendence of particular numbers, such as e and π.

(For applications of arithmetic methods to algebraic functions, *see* 4010.)

ANALYSIS.

Foundations of Analysis.

3200 General.
3210 Theory of functions of real variables.
3220 Series; infinite products and other infinite processes. (*See* also 5610, 5620.)
3230 Principles and elements of the differential calculus.
3240 Taylor's series, maxima and minima; other analytical applications of the differential calculus.
3250 Principles and elements of the integral calculus.
3260 Definite integrals (simple).
3270 Multiple integrals.
3280 Calculus of variations.

Theory of Functions of Complex Variables.

3600 General.
3610 Uniform functions of one variable.
3620 Multiform functions of one variable; Riemann surfaces.
3630 Expansions in series of functions, other than powers of the variable.
3640 Functions of several variables.

Algebraic Functions and their Integrals.

4000 General.
4010 Algebraic functions of one variable.
4020 Algebraic functions of several variables.
4030 Logarithmic, circular, exponential functions.
4040 General properties of elliptic functions and single theta functions; addition-theorem. (*See* also 8050, 8060.)
4050 Multiplication, division, transformation of elliptic functions; modular functions. (*See* also 4440.)
4060 Abelian integrals. (*See* also 8050, 8060.)
4070 Periodic functions of several variables; general theta functions.

Other Special Functions.

4400 General.
4410 Eulerian functions.

4120 Legendre's functions; Bessel's functions; hypergeometric functions.
4430 Other functions which may be defined by definite integrals. (*See* also 4860.)
4440 Automorphic functions. (*See* also 1220, 4050.)
4450 Other functions which may be defined by linear differential equations. (*See* also 4850.)
4460 Other functions which may be defined by functional equations. (*See* also 6030.)

Differential Equations.

4800 General.
4810 Existence-theorems for ordinary and partial differential equations.
4820 Methods of solution and reduction of ordinary differential equations.
4830 Methods of solution and reduction of partial differential equations of the first order, including the differential equations of theoretical dynamics.
4840 Methods of solution and reduction of partial differential equations of the second and higher orders.
4850 General theory of ordinary linear equations. (*See* also 4450.)
4860 Integration of ordinary linear equations by definite integrals. (*See* also 4430.)
4870 General theory of ordinary equations, not linear, of the first order.
4880 General theory of ordinary equations, not linear, of order higher than the first.

Differential Forms and Differential Invariants.

5200 General.
5210 Linear differential forms; Pfaffians.
5220 Differential forms of the second and higher orders.
5230 Transformation of differential forms, including tangential transformations.
5240 Differential invariants. (*See* also 1230, 1240.)

Analytical Methods connected with Physical Problems.

5600 General.
5610 Harmonic analysis; Fourier's series. (*See* also 3220.)
5620 Harmonic analysis; series other than Fourier's. (*See* also 3220.)
5630 Generalities on the differential equations of mathematical physics.
5640 Integration of the differential equations of mathematical physics by series.
5650 Integration of the differential equations of mathematical physics by definite integrals.
5660 Dirichlet's problem and analogous problems, affected by boundary conditions.

Difference Equations and Functional Equations.

6000 General.
6010 Recurring series.
6020 Solution of equations of finite differences.
6030 Solution of functional equations. (*See* also 4460.)

GEOMETRY.

Foundations.

6400 General.
6410 Principles of geometry; non-Euclidean geometries; hyperspace.
6420 Topology of space and hyperspace.
6430 Methods of analytical geometry. (*See* also 0840.)

Elementary Geometry.

6800 General.
6810 Planimetry; straight lines, and circles.
6820 Stereometry; straight lines, planes, and spheres.
6830 Trigonometry.
6840 Descriptive geometry; perspective.

Geometry of Conics and Quadrics.

7200 General.
7210 Metrical properties of conics.
7220 Projective properties of conics.
7230 Systems of conics. (*See* also 8070.)
7240 Metrical properties of quadric surfaces.
7250 Projective properties of quadric surfaces.
7260 Systems of quadric surfaces. (*See* also 8070.)

Algebraic Curves and Surfaces of degree higher than the second

7600 General.
7610 Metrical properties of algebraic plane curves of degree higher than the second.
7620 Projective properties of algebraic plane curves of degree higher than the second. (*See* also 8030.)
7630 Special plane algebraic curves.
7640 Algebraic surfaces of degree higher than the second. (*See* also 8040.)
7650 Special algebraic surfaces.
7660 Skew algebraic curves. (*See* also 8030.)

Transformations and General Methods for Algebraic Configurations.

8000 General.
8010 Collineation; duality.
8020 Other algebraic transformations.

8030 Groups of points on an algebraic curve; genus of curves; principle of correspondence. (*See* also 7620, 7660.)
8040 Groups of curves and points on an algebraic surface; genus of surfaces. (*See* also 7640.)
8050 Application of transcendental functions to algebraic curves. (*See* also 4040, 4060.)
8060 Application of transcendental functions to algebraic surfaces. (*See* also 4040, 4060.)
8070 Enumerative geometry. (*See* also 7230, 7260.)
8080 Connexes, complexes, congruences; higher elements of space.
8090 Systems (linear, and not linear) of curves and surfaces.
8100 Algebraic configurations in hyperspace.

Differential Geometry; applications of Differential and Integral Calculus to Geometry.

8400 General.
8410 Principles of infinitesimal geometry.
8420 Kinematic geometry.
8430 Curvature of plane curves; other applications of the differential calculus to plane curves.
8440 Curvature of skew curves; other applications of the differential calculus to skew curves.
8450 Curvature of surfaces; curvilinear co-ordinates, and other applications of the differential calculus to surfaces.
8460 Rectification and quadrature of curves; areas and volumes of surfaces.
8470 Special transcendental curves.
8480 Special transcendental surfaces.
8490 Hypergeometrical configurations and higher elements of space.

Differential Geometry; applications of Differential Equations to Geometry.

8800 General.
8810 Determination of curves on surfaces.
8820 Minimal surfaces.
8830 Surfaces determined by relations of curvature and by other differential properties.
8840 Conformal and other representations of surfaces on others (*cross reference* to Maps in Mathematical Geography).
8850 Deformation of surfaces.
8860 Orthogonal and isothermic surfaces.
8870 Hypergeometrical configurations and higher elements of space.

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(B.) MECHANICS.

[It is proposed that the schedule of Sound (p. 18) shall be *either* included with that of Mechanics, *or* sold as a separate part which may be issued with the schedule of Mechanics when it is so desired.

In the cases of Statics and Dynamics of Fluids, Elasticity, and Sound, there are (i.) headings of a more exact or mathematical type, and (ii.) headings in which the mathematics is subsidiary to observation and experiment.

In Mechanics a distinction has been made between (i.) General Analytical Mechanics, and (ii.) Special Methods and Problems.

Under "Measurement . . . " the properties of elastic and fluid systems are omitted, as they come later.]

0000 Philosophy.
0010 History. Biography.
0020 Periodicals. Reports of Institutions, Societies, Congresses, etc.
0030 General and Special Treatises, Text Books, Dictionaries, Bibliographies, Tables of Constants or Data.
0040 Addresses, Lectures, Essays, Dissertations.
0050 Pedagogy.
0060 Institutions, Museums, Collections, Economics.
0070 Nomenclature.

Measurement of Dynamical Quantities.

0100 General.
0110 Units and dimensions.
0120 Measurements of lengths, areas, volumes, angles.
0130 Measurements of mass and density.
0140 Numerical values of densities.
0150 Measurement of time; chronometers.
0160 Measurement of velocity, acceleration, energy of visible motion.
0170 Measurement of force: pendulum, spring balance, torsion balance, &c.
0180 The constant of gravitation.

Geometry and Kinematics of Particles and Solid Bodies.

0400 General.
0410 Geometry of masses; moments of inertia.
0420 Abstract kinematics, including composition of motions and displacements, relative motions, moving axes; theory of screws.
0430 Kinematics of machinery.
0440 Analysis of strains and deformations, infinitesimal and finite.

Principles of Rational Mechanics.

0800 General.
0810 Space, time, relative motion. Critical discussions.
0820 Dynamical laws and principles. (Laws of motion, virtual work, least action, &c.)

Statics of Particles, Rigid Bodies, &c.

1200 General.
1210 Composition and resolution of forces at a point.
1220 Attractions. Theory of the potential.
1230 Attractions of special systems. Ellipsoids, &c.
1240 Statics of a rigid body and of a system of rigid bodies. Astatics.
1250 Statics of jointed frameworks; graphic methods.
1260 Statics of chains and flexible surfaces.
1270 Stability of equilibrium.

Kinetics of Particles, Rigid Bodies, &c.

1600 General.
1610 Kinetics of particles; orbits, constrained motion, resisting media.
1620 Kinetics of rigid bodies (including impulses, initial motions arising from removal of constraint).
1630 Kinetics of chains and flexible surfaces.
1640 Special systems; pendulum, top, gyrostat, bicycle, governors.
1650 Ballistics.

General Analytical Mechanics.

2000 General.
2010 Kinetic and potential energy.
2020 Forms of the differential equations (including dissipative systems).
2030 Applications of the first variation of integrals; the partial differential equations.
2040 Equivalence of dynamical problems, dynamical analogies, models.
2050 Cyclical systems; self-equivalence.
2060 Properties of the integrals, reciprocal relations, periodic solutions.
2070 Methods for the actual determination of exact integrals.
2080 Approximate methods.
2090 Oscillations and initial motions about a state of equilibrium.
2100 Oscillations about a state of motion; stability and instability; kinetic foci.

Statics and Dynamics of Fluids.

2400 General.
2410 Statics of fluids.
2420 Stability of floating bodies. Oscillations of floating bodies.
2430 Kinematics of fluids. Irrotational motions. Sources and sinks.
2440 Motion of solid bodies in perfect fluids.
2450 Vortex motion. Vortex atoms.
2460 Free surfaces and surfaces of discontinuity. Jets.
2470 Rotating masses of gravitating fluid.
2480 Waves on liquids.
2490 Motion of viscous fluids.
2500 Motion of solid bodies in viscous fluids.
2510 Regular flow of viscous fluids in pipes, etc.
2520 Stability and instability of perfect and of viscous fluid motions. Turbulent motion.
2530 Measurement of fluid pressure. Measurement of fluid velocity.
2540 Measurement of viscosity.

Hydraulics and Fluid Resistance.

2800 Delivery of fluids in pipes
2810 Motion of water in channels and streams. Gauging.
2820 Hydraulic motors. Propellers. Pumps.
2830 Wind pressure. Windmills.
2840 Energy of the wind. Aeroplanes. Flight. Soaring.
2850 Resistance of ships. Navigation.
2860 Motion through the air; balloons, bullets, &c.

Elasticity.

3200 General.
3210 Strain and stress. Stress-strain relations. Strain-energy. Æolotropy. Crystals. (*See* also Crystallography.)
3220 Equations of elastic deformation and motion. General solutions. Special solutions. Vibrations.
3230 Torsion and flexure of prisms.
3240 *Elastic rods and wires; springs.
3250 *Elastic plates and shells.
3260 Impact and rebound; travelling loads.
3270 Stability of elastic systems.
3280 Principles of construction, including approximate formulæ for resistance of materials.
3290 Experimental determination of elastic constants.

Strength of Materials, Hardness, Friction, Viscosity, Lubrication.

3600 General.
3610 Imperfect elasticity. Limits of elasticity.
3620 Permanent set. Conditions of fracture.
3630 After-strain. Fatigue of elasticity.
3640 Hardness. Friction between solids; Abrasion.
3650 Viscosity, plasticity, ductility, malleability, etc.
3660 Pressure of earth and sand.
3670 Lubrication.

* If "Sound" is included or sold separately, prefix here "Equilibrium of."

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(C.) PHYSICS.

[It is proposed that if it be decided that the Schedule of Sound (p. 18) shall be included with that of Physics, it shall also be sold as a separate part which may be issued with that of Mechanics when it is so desired.]

0000 Philosophy.
0010 History. Biography.
0020 Periodicals. Reports of Institutions, Societies, Congresses, etc.
0030 General and Special Treatises, Text Books, Dictionaries, Tables of Constants or Data.
0040 Addresses, Lectures, Essays, Dissertations.
0050 Pedagogy.
0060 Institutions, Museums, Collections, Economics.
0070 Nomenclature.

THE CONSTITUTION OF THE ETHER AND OF MATTER.

0100 Estimates and Calculations of Molecular Magnitudes.
0200 The Kinetic Theory of Gases and Liquids (the Radiometer).
0300 Capillarity (including Internal Pressure, Vapour Pressure near Curved Surfaces, Pedesis or Brownian Movements).
0400 Molecular Theory of Solids, including Crystals. (*See* also Elasticity, B 3210.)
0500 Vortex-Atom Theory of Matter. (*See* Vortex-Motion, B 2450, and Physical Chemistry.)
0600 Theories of the Ether.
0700 Dynamical Theories of Gravitation.

HEAT.

Sources of Heat and Cold—

1000 General.
1010 Methods of Producing (1) High (2) Low and (3) Constant temperatures. Thermostats.

Thermometry—

1200 General.
1210 Expansion Thermometers.
1220 Pressure Thermometers.
1230 Electrical Thermometers.
1240 Other Methods of measuring Temperature (Colour. Vapour Density, Calorimetry, &c.).
1250 Thermometers for Special Purposes (Maximum, Minimum, Self-recording, &c.). (*See* also Meteorology.)
1260 Thermodynamic Scales. Comparison of Thermometers. Reduction to Absolute Scale. (*See* also Thermodynamics, C 2400, &c.)

Relations between Pressure, Temperature and Volume—

1400 General.
1410 Expansion of Solids by Heat. (For Compressibility of Solids, *see* Elasticity, B 3200, &c.)
1420 Permanent Set and After Strain after Heating. Annealing.
1430 Compressibility of Liquids.
1440 Expansion of Liquids by Heat.
1450 Relations between the Pressure, Temperature and Volume of Unsaturated Vapours and Gases.

Calorimetry and Specific Heat—

1600 General.
1610 Units of Heat. Methods of Determining Specific Heats.
1620 Specific Heats of Solids and Liquids.
1630 Relations between the Specific Heats of Solids and Liquids and their Physical State, Temperature, &c.
1640 Specific Heats of Gases and Vapours. Relations between them.
1650 Relations between the Specific Heats of Gases and Vapours, and their Temperature, &c.
1660 Relations between Specific Heat and Chemical Constitution (Dulong and Petit Law, &c.).

Change of State—

1800 General.
1810 Fusion and Solidification. Melting and Solidifying Points, &c.
1820 Changes of Volume on Melting and Latent Heat of Fusion. Effects of pressure.
1830 Superfusion.
1840 Pressure and Volume of Saturated Vapours. Boiling Points.
1850 Vapour Densities.
1860 Ebullition and Superheating.
1870 Liquefaction of Gases.
1880 Continuity of State. Critical State, Critical Point, &c.
1890 Hygrometry.
1900 Vaporization of Solids.
1910 Latent Heat of Solution.
1920 Vapour Pressures of Solutions, Mixtures, &c.

Thermal Conduction and Convection—

2000 General.
2010 Mathematical Theory of Conduction.
2020 Conductivity of Solids.
2030 Conductivity of Fluids.
2040 Convection.
2050 Laws of Cooling.

Determination of the Mechanical Equivalent of Heat—

2200 General.
2210 Frictional method of Measuring the Mechanical Equivalent.
2220 Electrical method of Measuring the Mechanical Equivalent.
2230 Other Methods.

Fundamental Laws of Thermodynamics—

2400 General.
2410 The First Law. Theory of Cyclic Transformations, etc.
2420 The Second Law. Theory of Absolute Temperature.
2430 Entropy and Available Energy.
2440 General Thermodynamic Formulæ.
2450 Thermodynamic Potential and Irreversible Operations.
2460 Thermodynamic Surfaces, Models, etc.
2470 Theory of Mixtures.
2480 Heat Engines.

LIGHT, INCLUDING INVISIBLE RADIATION.

Geometrical Optics and Photometry—

3000 General.
3010 Photometry. Units of Light. Brightness.
3020 Reflection and Refraction. (*See* also 3800, &c.).
3030 Refractive Indices. Dispersion and Spectra. (*See* also 3800, &c.).
3040 General Theory of Rays.
3050 General Optical Systems. Cardinal Points.
3060 Mirrors and Lenses.
3070 Spherical and Chromatic Aberrations. Achromatism.
3080 Telescopes and Microscopes. Projection and Photographic Apparatus.
3090 Other Optical Apparatus. Camera Obscura. Heliostats. Interferential Refractometers, etc.
3100 Variable Medium.

Meteorological Optics.

(Memoirs will be catalogued under the heading of Meteorological Optics or under the other headings referred to as may in each case seem best, but duplicate entries will, as far as possible, be avoided.)

3200 General.
3210 Astronomical Refraction. Scintillation.
3220 Theories of Rainbows, Halos, etc. Colours of Clouds. (*See* also 3640.) (For observations *see* Meteorology Schedule.)
3230 Colour of the Sky. (*See* also 3640.)
3240 Atmospheric Absorption. (*See* also 3850.)
3250 Polarisation of the Sky. (*See* also 4010.)
3260 Estimates of the Energy of Sun-light. (*See* also Astronomy.)

PHYSICAL OPTICS.

(Memoirs will be catalogued under this heading or under Electromagnetic Waves, &c. (6600, &c.), as may in each case seem best, but duplicate entries will, as far as possible, be avoided.)

Velocity, Wave-Length, etc., of Radiation.

3400 General.
3410 Measurements of the Velocity of Light.
3420 Aberration and Moving Media.
3430 Measurements of Wave-Length. (*See* also 3030.)

Interference and Diffraction—

3600 General.
3610 Interference.
3620 Diffraction.
3630 Diffraction Gratings and Diffraction Spectra.
3640 Diffraction by Small Particles. Wave Theory of Rainbow, etc.
3650 Definition of Optical Instruments.

Reflexion, Refraction and Absorption (*see* also 3020, 3030)—

3800 General.
3810 Reflecting Powers of Materials. Irregular Reflexion.
3820 Dynamical Theory of Reflexion and Refraction in Transparent Media. Polarization by Reflexion.
3830 Refraction in Strained and Crystalline Media.
3840 Metallic Reflexion.
3850 Selective Reflexion and Absorption, including Objective Colours. Anomalous Dispersion.
3860 Relation of Refraction, Dispersion and Absorption to Chemical Constitution. Optical Glass.

Polarization—

4000 General.
4010 Methods of Producing Polarized Radiation.
4020 Methods of Measuring the Properties of Polarized Radiation.
4030 Rings and Brushes of Crystals.
4040 Rotatory Polarization.

(For Magnetic Actions on Polarized Light, *see* 6640.)

The Emission of Radiation, Phosphorescence, etc.—

4200 General.
4210 Radiation and Temperature. (For Temperature of Sun and Solar Radiation, *see* Meteorology Schedule.)
4220 Luminescence due to Chemical or Electric Actions. (*See* also 6840.)
4230 Phosphorescence due to Impact of Radiation, produced by Heat, by Electric Discharge, etc. (*See* also 6840.)
4240 Röntgen and Allied Radiations. (*See* also 6850.)

PHYSIOLOGICAL OPTICS.

(*See* also Physiology. Such papers only will be entered here as are likely to be of interest to Physicists.)

4400 General.
4410 Construction of the Eye.
4420 Movements of the Eye. Accommodation.
4430 Defects of the Eye and their correction. Short Sight, Astigmatism, Irradiation, etc.
4440 Binocular Vision (Magnitude and Distance of Objects. Relief).
4450 Colour Vision. Subjective Colours. Colour Blindness.
4460 Various Phenomena produced within the Eye.
4470 Instruments connected with Physiological Optics.

ELECTRICITY AND MAGNETISM.

Electric and Magnetic Units—

5000 General.

Electrostatics—

5200 General.
5210 Electrification by Contact or Friction of Heterogeneous Substances. Frictional and Induction Machines.
5220 Electric Charge and Distribution; Condensers.
5225 Electrocapillary Phenomena.
5230 Electric Force, Quantity, Density, and Capacity.
5240 Potential Difference. Electrometers.
5250 The Dielectric; Inductive Capacity. Stress. Energy, etc.
5260 Pyro- and Piezo-Electricity.
5270 Theories of Atmospheric Electricity. (*See* Meteorology Schedule.)

Magnetism—

5400 General.
5410 Natural and Artificial Magnets.
5420 Permanent Magnets and the Theory of the Magnetic Field. Magnetic Circuit.
5430 Theory of Magnetic Induction and Hysteresis.
5440 Measurement of Magnetic Force, Susceptibility, Induction, etc.
5450 Hysteresis.
5460 Relations between Thermal, Elastic, and Magnetic Properties of Bodies.
5470 Diamagnetism.
5480 Physical Theories of the Nature of Magnetism.

The Electric Current—

5600 General.
5610 Theory and Construction of Primary Cells.
5620 Theory and Construction of Secondary Cells.
5630 Ohm's Law. Divided Currents and Networks of Linear Conductors.
5640 Standards of Resistance. Absolute Determination.
5650 Methods of Comparison of Resistances.
5660 Specific Resistance. Relation to Temperature, Magnetism, and other Physical Properties.
5670 Hall Effect.
5680 Conduction in Continuous Media. (Conduction in Two Dimensions. Conduction in Three Dimensions).
5690 Special Problems. Conduction in Gases, Flames, &c. (*See* also 6840.)
5700 Measurements of Currents. Continuous, Transient, Alternating.
5710 Thermoelectricity.

Electrical Instruments and Machines—

6000 General.
6010 Galvanometers, Voltmeters, Wattmeters, &c., Registering Instruments.
6020 Apparatus for Starting and Regulating Currents.
6030 Electromagnets.
6040 Induction Coils. Transformers.
6050 Magneto-Electric Machines.
6060 Dynamos.
6070 Motors.

Electrolysis—

6200 General. (*See* also Physical Chemistry, **D**, 3500, &c.)
6210 Electrochemical Series and Electrochemical Equivalents. Voltaic Potential Differences.
6220 Mixed Electrolytes and Secondary Actions.
6230 Polarization and Passivity.
6240 Migration of the Ions. Electrical Osmose.
6250 Theories of Electrolysis. Dissociation of Electrolytes.

Electrodynamics—

6400 General.
6410 General Theory of Electrodynamics.
6420 Mutual Actions of Steady Currents, and of Currents and Magnets.
6430 Dynamical Theories of Electric Currents.
6440 Measurement of Self Induction and Mutual Induction.
6450 Effects of Self Induction, Mutual Induction, and Capacity on the Flow of Currents.
6460 Alternating Currents in Wires. Telegraphy. Telephony.

Electromagnetic Waves, General Theory of Light, Relations to Electricity—

6600 General.
6610 Production and Properties of Electromagnetic Waves.
6620 Theory of Electromagnetic Waves and General Theory of Light.
6630 Aberration and Moving Media.
6640 Influence of the Electric Field on Optical Phenomena.
6650 Magnetic Action on Polarized Light.
6660 Influence of Magnetism on the Emission and Absorption of Light.
6670 Influence of Light (and other Radiations) on Electric Phenomena. (*See* also 6850.)

Electric Discharge—

6800 General.
6810 Convective Loss. Points. Leakage.
6820 Disruptive Discharge. The Electric Spark. Oscillatory Discharge. (*See* also 6620.)
6830 The Voltaic Arc.
6840 Discharge in Rarefied Gases. Cathode Rays.
6850 Effects of Light, Röntgen Rays, &c., on the Discharge.

SOUND.

Kinematics of Vibrations and Wave-motions.

9000 General.
9010 Analysis and synthesis of periodic motions.
9020 Methods of maintaining, observing, and measuring vibrations.
9030 Methods of exhibiting and illustrating the phenomena of wave-motion.
9040 Reflexion and refraction of waves.
9050 Interference, diffraction, and scattering of waves. Huygens' principle.

Vibrations.

9100 General.
9110 Vibrations of strings and rods. Curved rods.
9120 Vibrations of membranes and plates. Curved plates. Bells.
9130 Vibrations of gases in tubes and other cavities. Effects of apertures.
9140 Resonance. Resonators. Objective combination-tones.

Propagation of Sound.

9200 General.
9210 Velocity of sound.
9220 Reflexion and refraction of sound.
9230 Interference and diffraction of sound. Beats.
9240 Damping of sound-waves by viscosity and heat-conduction.
9250 Acoustic transparency.

Methods of Analysis and Measurement.

9300 General.
9310 Methods of illustrating and observing air-waves.
9320 Measurement of the velocity, amplitude, energy and frequency of sound-waves.
9340 Analysis of compound sound-waves.

The Physical Basis of Music and the Sensation of Sound.

9400 General.
9410 Musical instruments.
9420 The voice. Speaking machines.
9430 Limits of audition as dependent on intensity and pitch.
9440 Modification of vibrations in transit through the ear.
9450 Quality of musical tones. Consonance and dissonance. Chords. Physical explanation of harmony.
9460 Absolute pitch. Standards of pitch.
9470 Scales. Temperament.

Physiological Acoustics.

(*See* also Physiology. Such papers only will be entered here as are likely to be of interest to physicists.)
9500 General.
9510 Arrangement and action of the vocal organs. (*See* 9520.)
9520 Arrangement and action of the ear.

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(D.) CHEMISTRY.

0000 Philosophy.
0010 History. Biography.
0020 Periodicals. Reports of Institutions, Societies, Congresses, etc.
0030 General and Special Treatises, Text Books, Dictionaries.
0040 Bibliographies. Tables of Constants or Data.
0050 Addresses, Lectures, Essays, Dissertations. Pedagogy.
0060 Institutions, Museums, Collections, Economics.
0070 Nomenclature.

0100 Chemistry (Specific) of the Elements.

All specifically chemical subject matter, and such other entries as may be desirable, relating to the elements generally excepting carbon, shall be arranged under this heading. In the case of carbon, such entries as concern the element or those of its compounds which are not treated as derivatives of hydrocarbons (cyanogen, &c.) shall alone be included under this heading.

The elements shall be arranged alphabetically in the order of their symbols, and numbered from 0110 onwards as follows, the appropriate symbol being appended to each number :—

0110 (**Ag**) Argentum (Silver).
0120 (**Al**) Aluminium.
0130 (**Ar**) Argon.
0140 (**As**) Arsenic.
0150 (**Au**) Aurum (Gold).
0160 (**B**) Boron.
0170 (**Ba**) Barium.
0180 (**Be**) Beryllium.
0190 (**Bi**) Bismuth.
0200 (**Br**) Bromine.
0210 (**C**) Carbon.
0220 (**Ca**) Calcium.
0230 (**Cd**) Cadmium.
0240 (**Ce**) Cerium.
0250 (**Cl**) Chlorine.
0260 (**Co**) Cobalt.
0270 (**Cr**) Chromium.
0280 (**Cs**) Cæsium.
0290 (**Cu**) Copper.
0300 (**Er**) Erbium.
0310 (**F**) Fluorine.
0320 (**Fe**) Ferrum (Iron).
0330 (**Ga**) Gallium.
0340 (**Gd**) Gadolinium.
0350 (**Ge**) Germanium.
0360 (**H**) Hydrogen.
0370 (**He**) Helium.
0380 (**Hg**) Hydrargyrum (Mercury).
0390 (**I**) Iodine.
0400 (**In**) Indium.
0410 (**Ir**) Iridium.
0420 (**K**) Kalium (Potassium).
0430 (**La**) Lanthanum.
0440 (**Li**) Lithium.
0441 (**Mg**) Magnesium.
0442 (**Mn**) Manganese.
0443 (**Mo**) Molybdenum.
0445 (**N**) Nitrogen.
0446 (**Na**) Natrium (Sodium).
0447 (**Nb**) Niobium.
0448 (**Nd**) Neodymium (Didymium).
0449 (**Ni**) Nickel.
0500 (**O**) Oxygen.
0510 (**Os**) Osmium.
0520 (**P**) Phosphorus.
0530 (**Pd**) Palladium.
0540 (**Pr**) Praseodymium.
0550 (**Pt**) Platinum.
0560 (**Rb**) Rubidium.
0570 (**Rh**) Rhodium.
0580 (**Ru**) Ruthenium.
0590 (**S**) Sulphur.
0600 (**Sa**) Samarium.
0610 (**Sb**) Stibium (Antimony).
0620 (**Sc**) Scandium.
0630 (**Se**) Selenium.
0640 (**Si**) Silicon.
0650 (**Sn**) Stannum (Tin).
0660 (**Sr**) Strontium.
0670 (**Ta**) Tantalum.
0680 (**Tb**) Terbium.
0690 (**Te**) Tellurium.
0700 (**Th**) Thorium.
0710 (**Ti**) Titanium.
0720 (**Tl**) Thallium.
0730 (**Tu**) Thulium.
0740 (**Ur**) Uranium.
0750 (**Va**) Vanadium.
0760 (**Vi**) Victorium.
0770 (**W**) Wolfram (Tungsten).
0780 (**Yr**) Yttrium.
0790 (**Yt**) Ytterbium.
0800 (**Zn**) Zinc.
0810 (**Zr**) Zirconium.

All entries relating to the elements generally, or which cannot be specifically referred to any one of the known elements, shall be arranged under 0100.

Specific entries relating to the halogens collectively shall be arranged in division 0250 under *Halogens*.

The mode of sub-dividing entries made under any element in each numbered division shall be as follows:—

(*a*) All entries relating either to the element itself or of a general character shall come immediately under the number.

(*b*) Entries relating to compounds shall be printed in the subdivision of their second or dominant constituent.

(*c*) References to hydroxides, acids, and salts shall be entered under the oxide; the corresponding sulphur compounds under the sulphide.

(*d*) In each subdivision the entries may be arranged in such order that those relating, α, to the history or origin of the substance come first, and following these, those relating, β, to its preparation or manufacture; γ, to its structure, or of a theoretical nature; δ, to its interactions or use; ϵ, to its compounds.

It would, as a rule, be unnecessary to repeat a reference to any one substance under each of the sub-sections, α—ϵ; it would suffice to enter the reference in one of these (say β), and to append at the close of the entry, γ, δ, &c., if statements of special importance falling under these headings are made in the communication. It would be possible to carry the analysis still farther by means of symbols, such as ϕ, κ, &c., to indicate that physical properties, crystalline form, &c., were specially considered in a communication.

0900 **Laboratory Procedure.**

0910 Plans, fittings, appliances and apparatus.
0920 Lecture apparatus and experiments.
0930 Operations in inorganic chemistry.

Entries under 0930 shall be made under headings such as dissolution and solvents, crystallisation, distillation, sublimation, reduction by hydrogen, &c., oxidation, electrolysis, furnace operations, &c., arranged alphabetically.

1000 **Organic (Carbon) Chemistry (Specific).**

All entries relating to the subject generally shall be arranged in this division under 1000, excepting those relating to carbon itself or to compounds not usually regarded as derivatives of hydrocarbons.

Substitution derivatives of the compounds included in each of the numbered divisions—especially haloid and allied derivatives formed by the introduction of monad radicles—shall, as far as possible, be entered under the compounds from which they are derived.

Entries under the name of a substance may, if necessary, be subdivided in the manner provided for inorganic substances.

1010 **Hydrocarbons.**

1020 Paraffins.
1030 Unsaturated open chain hydrocarbons.
1040 Benzenoid hydrocarbons.
1050 Reduced benzenoid hydrocarbons. (Terpenes, &c.)
1060 Unclassified hydrocarbons.

Each of these divisions shall be subdivided (excepting 1010 and 1020) into isologous groups, in each of which compounds shall be entered in homologous order.

Haloid and allied substitution derivatives shall be entered under the corresponding hydrocarbon.

The position to be given to the entry may be indicated on the slip:—

(*a*) By placing after the division number the signs 2, 4, &c., to indicate the homologous series C_nH_{2n-2}, C_nH_{2n-4}, &c.
As there is a special division, 1020, for paraffins, it is unnecessary to distinguish these. The C_nH_{2n} series will be denoted by the absence of any such index number.

(*b*) By affixing also the signs C_1, C_2, C_x, to indicate the number of carbon atoms in the compound referred to.

(*c*) By affixing also, if necessary, the symbols Cl, CN, NO_2, &c., to indicate the nature of the substitution derivative.
Thus, a reference to nitropropane, $CH_3.CH_2CH_2(NO_2)$, would be marked $1020.C_3.NO_2$, one to allene, $CH_2:C:CH_2$, $1030.2.C_3$, one to bromotoluene, $1040.6.C_7.Br$.

1100 **Alcohols and Ethers.**

1110 Paraffin-ols.
1120 Unsaturated open chain-ols.
1130 Benzenoid-ols.
1140 Reduced benzenoid-ols.
1150 Unclassified alcohols.

Each of these divisions shall be subdivided into ols, di-ols, tri-ols, &c., each of which shall be further subdivided as under hydrocarbons.

Haloid and allied derivatives of alcohols, thienols and selenols, &c., shall be entered under corresponding alcohols.

Ethers shall be entered under the alcohols from which they are derived, also ethereal salts of inorganic acids and of the cyanic acids.

1200 **Acids.**

1210 Paraffin acids.
1220 Unsaturated open chain acids.
1230 Benzenoid acids.
1240 Reduced benzenoid acids.
1250 Unclassified acids.

Each of these divisions shall be subdivided according to the number of oxygen atoms present in the acid, further subdivision being carried out as in the case of hydrocarbons.

The position of the acid in the isologous series shall be deduced from the empirical formula.

The number of oxygen atoms in the acid shall be indicated, and also, if it be thought desirable, the character of the acid; the basicity by numbers, to which ol, al, on, id or cy shall be appended according as the acid is a hydroxy, aldehydic, ketonic or lactonic acid, or one derived from an oxy-cycloid such as furane. Thus lactic acid would be marked $1210.C_3.O_3(1.ol)$; protocatechuic acid, $1230.8.C_7.O_4(1.2.ol)$.

Sulphinic and sulphonic acids shall be included under acids in the subdivisions of the corresponding carboxy acids.

Derivatives of acids shall as far as possible be included under acids, such as haloid and allied derivatives, hydroxy and amino-acids, aldehydic and keto-acids, ethereal salts, acid chlorides, oxides, &c.

1300 **Aldehydes and Ketones.**

1310 Open chain als
1320 Closed chain als.
1330 Open chain ons.
1340 Closed chain ons.
1350 Unclassified als and ons.

Each of these divisions, excepting 1350, shall be subdivided according to the number of oxygen atoms present in the keto-compound, further subdivision being carried out as in the case of hydrocarbons.

1400 **Carbohydrates; Glucosides; Resins.**

1410 Monosaccharides.
1420 Disaccharides.
1430 Trisaccharides.
1440 Carbohydrates other than mono- di- and trisaccharides.
1450 Glucosides.
1460 Resins. Unclassified neutral compounds.

Compounds belonging to divisions 1410, 1420, 1430, shall be subdivided according to the number of oxygen atoms they contain, and whenever necessary further subdivided as in other series.

Compounds belonging to divisions 1440, 1450 and 1460, shall be entered alphabetically.

1500 **Amino- and Azo-compounds.**

1510 Amino-paraffins.
1520 Amino-derivatives of unsaturated open chain hydrocarbons.
1530 Amino-derivatives of benzenoid hydrocarbons.
1535 Amino-derivatives of reduced benzenoid hydrocarbons.
1540 Acid amides and allied compounds.

1545 Imides, imido-ethers, &c.
1550 Azo-compounds (open chain).
1560 „ „ (closed chain).
1570 Diazo-compounds (open chain).
1580 „ „ (closed chain).
1590 Unclassified amino- and azo-compounds.

Each of the divisions 1510–1540 shall be subdivided into monamino- diamino-, &c., derivatives, which shall be arranged as in other series.

Hydroxylamine derivatives shall constitute a sub-section of the monamino-; hydrazine derivatives, amidines and amidoxims a sub-section of the diamino-; and diazoimide (N_3H) derivatives a sub-section of the triamino-derivatives.

Secondary and tertiary amines shall be entered under the primary amines from which they are derived.

Ammonium derivatives shall be entered under the corresponding amino-derivatives.

Hydrazo- and oxyazo- compounds shall be entered under corresponding azo-derivatives

1600 **Mixed Cycloids.**

1610 Cycloids containing oxygen.
1620 „ „ sulphur (or Se or Te).
1630 „ „ nitrogen (or P).
1640 „ „ several elements besides carbon.
1650 Unclassified cycloids.

Cycloids other than hydrocarbons, formed by the interposition of one or more polyad elements other than carbon, shall be arranged in this group—*e.g.*, pyrone, thiophen, pyridine, piperidine, pyrazole, uric acid, cyanuric acid, &c.

Each of the divisions shall be subdivided according to the number of polyad elements other than carbon present in the compound.

1700 **Organo-metallic and allied Compounds.**

All compounds of hydrocarbon radicles with elements other than the halogens, oxygen, sulphur, selenium, and nitrogen, shall be entered in this section in the alphabetical order of the dominant elements. Under each element the order of arrangement shall be as in other series.

1800 **Alkaloids.**

1810 Alkaloids derived from plants.
1820 „ „ „ animals.

Under 1800 a list shall be given of vegeto-alkaloids, together with the Latin names of the plants from which they have been obtained, arranged in the alphabetical order of the plant names.

In 1810 and 1820 alkaloids shall be arranged alphabetically.

1900 **Proteids.**

1910 Animal proteids.
1920 Vegetable.

Entries in these two groups shall be arranged alphabetically.

2000 **Coloured Compounds.**

2010 Coloured substances not dyestuffs.
2020 Dyestuffs.

These divisions shall be subdivided—2010 into Hydrocarbons (coloured), Alcohols (coloured), Ketones (coloured), &c.; 2020 into Azo - dyes, Triphenylmethane - dyes, Anthracene - dyes, Dyestuffs of vegetable origin, Unclassified dyes, &c., in each of which subdivision entries shall be arranged alphabetically.

2500 **Operations in Organic Chemistry.**

Entries shall be made in this division under headings such as dissolution and solvents, distillation, &c., oxidation, nitration, acetylation, hydrolysis, &c., &c.

3000 **Analytical Chemistry.**

3100 Detection of elements.
3150 „ compounds.
3200 Estimation of elements
3300 „ compounds.
3350 Gas analysis.
3400 Applied analysis.

All entries of a general character relating to apparatus, methods, &c., &c., shall be arranged in division 3000, under appropriate headings.

Division 3200 shall include all entries relating to the determination of individual elements in their compounds and in mixtures, excluding determinations of atomic weight. The entries shall be arranged in sections distinguished by the elementary symbols used as registration symbols.

Division 3300 shall include all entries relating to the determination of individual compounds—*e.g.*, alkaloids, carbohydrates, &c., including that of compound radicles such as acetyl in acetates, methyl in ethers, &c., but excluding gases. The entries shall be arranged in sections distinguished by the elementary symbols of the dominant elements in the compounds used as registration symbols, or in the case of organic compounds by the registration symbols of the groups to which they belong. If necessary, gravimetric, volumetric, electrolytic, physical, &c., methods may be distinguished by letters, such as *g*, *v*, &c.

Division 3400 shall include all entries relating to the analysis of composite materials such as drugs, foods, soils, waters and technical products generally, arranged under appropriate significant headings.

3500 **Theoretical and Physical Chemistry.***

3550 Conditions and laws of chemical change.
3600 Mass properties.
3650 Mechanical properties.
3700 Thermal properties.
3750 Electrical and magnetic properties.
3800 Optical properties.
3850 Photo-chemistry.

The entries in these sections shall be arranged under appropriate significant headings.

Section 3500 shall include general speculations on energetics, entropy, philosophy, and the theory of cognition, as well as all entries of a general character relating to such subjects as the constitution of matter, the molecular and atomic hypothesis, the classification of elements and of compounds, the periodic law, &c., allotropy (to include all forms of isomerism) and structure, interrelationship of gases, liquids and solids, &c.

Section 3600 shall include all entries relating to atomic and molecular weights, to densities of gases, liquids or solids, to molecular and atomic volumes, and to crystallography.

Section 3650 shall include all entries relating to motion, diffusion, solubility, cohesion, surface tension, and viscosity.

Section 3700 shall include all entries relating to combustion and flame, dissociation, thermo-chemistry, melting and boiling points, specific and latent heats, electric furnace operations.

Section 3750 shall include all entries relating to electrolysis which do not come under analysis.

4000 **Physiological Chemistry.**

4010 Enzymes.
4020 Fermentation.
4030 Vegetable metabolism.
4040 Animal metabolism.
4050 Pathologic changes—immunity.

The entries under these headings shall be confined to notices of specifically chemical work on the subjects scheduled.

* To be sold separately.

Specimen Page to Illustrate Mode of Arrangement under Subject Headings and use of Modified Titles.

0020 Chemical Bibliography. Biography.

Baumann, Eugen, mit Bildniss und Verzeichniss seiner Schriften. *Kossel, A.*, B., 1897, 3197–3209.

Blomstrand. Christian Wilhelm, *Klason, Peter*, B., 1897, 3227–3241. Kekulé memorial lecture, with portrait. *Japp, F. R.*, Soc., 1898, 97–138.

Stohman, Friedrich, mit Verzeichniss seiner Schriften. *Ostwald, W.*, B., 1897, 3214–3222.

0040 Pedagogy.

Chapters on the aims and practice of teaching, edited by *Frederic Spencer*. Cambridge (England). At the University Press, 1897. Chap. X., Chemistry, by *Armstrong, H. E.*, 222–259.

0100 Elements.

α Sur un nouvel extrait de la bauxite française. *Bayer, R. S.*, Bl., 1894, **11**, 1155.

Argon, a new constituent of the atmosphere. β φ. *Rayleigh, Lord*, and *Ramsay, W.*, Phil. Trans., 1895, 187–241.

0110 Aluminium.

δ Amalgamirtes mit Wasser als neutrales Reductionsmittel. *Wislicenus, H.*, and *Kaufmann, L.*, B., 1895, 1323, 1983.

— *Cohen, J. B.*, and *Ormandy, R.*, Ibid., 1505.

Use of amalgamated, in preparing benzenoid hydrocarbons. *Hirst, H. R.*, and *Cohen, J. B.*, Soc. Pr., 1895, 148.

Action sur le carbone et ses composés. *Franck, L.*, Bl., 1894, 439.

C. Carbure. *Franck, L.*, Bl., 1894, 445.

Cl. Krystallisirtes. κ. *Dennis, L. M.*,

β Z. a. Ch., 1894, 339.

ε Avec du borneol, du camphre, et du camphre monochloré. *Perrier, G.*, C. r., 1894, **119**, 276.

Avec les composés nitrés aromatique. *Perrier, G.*, C. r., 1895, **120**, 930.

O. Sur les carbonates, les hydrates et

β les phosphates. *Schlumberger, E.*, Bl., 1895, 41.

δ Réduction par le charbon. *Moissan, H.*, C. r., 1894, **119**, 260.

Si. Zur Chemie einiger Alumosilicate.

γ Einwirkung der Alkalien. *Thugutt, S. J.*, Jahrb. f. Min. Beil., **9**, 554.

0390 Iodine.

β Pure from cuprous iodide. *Lean, Bevan*, and *Whatmough, W. H.*, Soc., 1898, 148–157.

Cu. Cuprous iodide from iodoform. *Lean*,

β *Bevan*, and *Whatmough, W. H.*, Soc., 1898, 153.

0510 Nitrogen.

Density of, from various sources. *Rayleigh, Lord*, and *Ramsay, W.*, Phil. Trans., 1895, 187.

O Nitrosoverbindungen, Aliphatische. φ.

β *Piloty, O.*, B., 1898, 452.

P Polymeric chloronitrides of phosphorus.

β *Stokes, N. H.*, Am. Chem. Journ., 1897, 782–795.

1010 Hydrocarbons.

Petroleum, Composition of Californian. *Maybery, C. F.*, Am. Chem. Journ., 1897, 796.

1020 Paraffins.

β propan, Brom-2-nitroso-2-, aus Acetoxim und Brom. Identisch mit Brompropylpseudonitrol. *Piloty, O.*, B., 1898, 454. Octan-Ueber ein Nitroso-. Dimethyl-2·5-nitroso-2-hexan. *Piloty, O.*, und *Ruff, O.*, B., 1898, 457.

1130 Benzenoid-ols.

δ phenol, *p*-Amido-, und dessen Äther. Einwirkung des Oxalesters auf. *Piutti, A.*, und *Piccoli, R.*, B., 1898, 330.

1230 Benzenoid Acids.

Cinnamic and allied acids as a criterion of structure, Etherification of. *Sudborough, J. J.*, and *Lloyd, L. L.*, Soc., 1898, 81–96.

1340 Closed chain ons.

β Sulfonale cyclischer Ketone. Pentanon-, Methylpentanon-, Methylhexanon-, und Heptanonsulfonal. *Wallach, O.*, und *Borsche, W.*, B., 1898, 338.

3500 Theoretical Chemistry.

Stereoisomerism as affecting formation of ethereal salts from unsaturated acids. *Sudborough, J. J.*, and *Lloyd, L. L.*, Soc., 1898, 81–96.

3550 Conditions of Chemical Change.

Moisture, Influence on production and stability of ozone, and on interaction of mercury and halogens of. *Shenstone, W. A.*, Soc., 1897, **71**, 477–488.

ROYAL SOCIETY OF LONDON.

International Catalogue of Scientific Literature.

(E.) ASTRONOMY.

0000 Philosophy.
0010 History. Biography.
0020 Periodicals. Reports of Institutions, Societies, Congresses, etc.
0030 General and Special Treatises, Text Books, Dictionaries. Bibliographies. Tables of Constants or Data.
0040 Addresses. Lectures. Essays. Dissertations.
0050 Pedagogy.
0060 Institutions, Museums, Collections, Economics.
0070 Nomenclature.

SPHERICAL (GEOMETRICAL) ASTRONOMY

0100 **General.**
0110 Celestial Sphere; Coordinates, their Transformation and Differential Variation.
0150 Longitude (Geographical), Latitude, Meridian Line, Rising and Setting, etc.

0200 **Reduction to Centre of Earth.**
0210 Refraction, Twilight, Dip of the Horizon.
0220 Parallax, Diameter.

0240 **Correction for Movement of Earth and Equinoxes.**
0250 Aberration.
0260 Precession and Nutation.
0270 Annual Parallax.
0280 Star Reduction (from mean to apparent place).
0290 Locus Fictus.

0300 **Geocentric and Heliocentric Coordinates.**
0310 Calculation of Ephemerides.

0350 **Eclipses, Occultations, Transits** (of Planets and Satellites across disc of Sun or Planets).

THEORETICAL ASTRONOMY AND MECHANICS OF THE HEAVENS.

0400 **General.**

0410 Law of Universal Gravitation.

0420 **Solar System.**

0430 *Orbital Movement of two Bodies;* Kepler's Laws

0440 *Calculation of Orbits.*

0450 Planets; Comets; Meteoric Streams.

0460 *Correction of Orbits;* Application of Method of Least Squares.

0470 *Orbital Movement of three or more Bodies;* Centre of Gravity.

0500 *General Perturbations;* Planetary Theory in General.

0510 Theory and Numerical Application (Tables) of Mercury.
" " " " " Venus.
" " " " " Earth.
separately for each Planet.

0550 Theory of the Moon.

0560 Theory of Satellites (exc. Moon of Earth) in General.

0570 Theory of Satellites and the Ring System of Saturn. (Separately for each Planet as above.)

0580 Correction of Elements.

0590 Construction of Tables.

0600 *Special Perturbations;* Application of Method of Mechanical Quadratures.

0610 *Figures of Equilibrium* of Rotating Masses of Fluid.

0620 Figure of the Earth, its Oceans and Atmosphere.

0630 Figure of the Sun.

0650 Figure of the Planets (separately for each Planet).

0660 Figure of Satellites, incl. Ring System of Sun.

0670 Figure of Comets and Meteoric Streams.

0700 *Perturbed Rotation;* Reaction on other Bodies.

0710 Precession and Nutation of the Earth.

0720 Movement of the Poles on the Surface of the Earth.

0730 Libration of the Moon.

0740 Libration of Planets and Satellites.

0750 *Theory of Tides.*

0760 *Constitution of the Solar System.*

0770 General Laws of Distribution of Planets and Comets.

0780 Origin, Stability, Development of the System.

0800 **Stellar Universe.**

0810 *Structure of the Universe;* Stellar Systems.

0820 *Theory of Double Stars;* Calculation of Orbits.

0830 *Resisting Medium, Ether, Temperature of the Universe*

0840 *Motion of Solar System in Space.*

PRACTICAL ASTRONOMY.

1000 **Observatories and Instruments.**

1010 *Observatories (General).*
1020 Situation, Buildings, Domes, Observing Chairs, etc.
1050 *Instruments (in General).*
1060 Telescopes, Refractors, Reflectors.
1070 Eyepieces and Accessories.
1080 Micrometers.
1090 Spectroscopes.
1100 Photographic Apparatus.
1110 Polarisation Apparatus.
1120 Photometers.
1130 Radiometer (Bolometer).
1140 Miscellaneous.
1150 *Meridian and Extra-meridian Instruments for Absolute Positions.*
1160 Theory, Rectification, Reduction of Observations.
1200 *Instruments for Relative Positions.*
1210 Equatorials (Theory, Rectification, etc., as above). Heliometer (Theory, etc.).
1250 *Various.*
1260 Zenith Telescope, Orbit Sweeper, Altazimuth, Theodolite, Sextant, etc.
1280 *Auxiliary Instruments.*
1290 Clocks, Chronographs, Heliostats, etc.

1300 **Observations.**

1310 *Methods of Observation.*
1320 Ordinary Methods.
1330 Astrophysical.
1340 Photographic.
1350 *Personal Equations;* their Determination.
1360 *Observations of Position.*
1370 Meridian.
1380 Extra-meridian of Absolute Position.
1390 Micrometer of Relative Positions.
1400 *Observations of Eclipses, Occultations, and Transits.*
1410 *Spectroscopic Observations.*
1440 *Photographic Observations.*
1470 *Miscellaneous* (Photometric, Thermic, Polarisation, etc.).

1500 **Determination of Astronomical Constants by Observation.**

1510 Constant of Aberration.
1520 „ Precession and Nutation.
1530 „ Solar Parallax.
1540 „ Lunar Parallax.
1550 Miscellaneous (Refraction, Semi-diameter, Annual Parallax).

DESCRIPTIVE AND PHYSICAL ASTRONOMY

1600 **Solar System.**

1610 *Sun.*
1620 Constants (Dimension, Mass, Density, Distance, etc.).
1660 Rotation, Spots, Faculæ, Atmosphere, Chromosphere, Corona.
1700 Temperature, Brightness.
1730 Eclipses.
1750 Connection of Solar Processes with Terrestrial Phenomena.
1760 Spectrum, including Catalogues of Lines in the Solar Spectrum.
1780 Spectroscopic Researches of Surface, Spots, Faculæ. Determination of Rotation.
1800 Conclusions from Spectroscopic Observations as to Physical Constitution.
1850 Photographs.
1860 Drawings.
1900 *Moon.*
1910 Constants (Dimensions, etc.)
1920 Rotation, Configuration of Surface.
1930 Temperature, Brightness, Phases, Lumière Cendrée.
1940 Eclipses and Occultations.
1950 Influence on Terrestrial Phenomena.
1960 Spectroscopic and Polariscopic Observations.
1970 Photographs.
1980 Maps, Drawings.
2000 *Mercury, Venus, etc.*
(The Planets separately, including eventually Intra-mercurial and Transneptunian, with similar sub-divisions as above; Sun, Moon.)
2100 *Spectroscopic Researches of Planets* in general; Physical Conclusions.
2200 *Satellites of Planets and Ring System of Saturn.*
(Separately for each Planet; Mars, Jupiter, etc.)
2300 *Comets* (with suitable sub-divisions).
2400 *Meteors and Shooting Stars.*
2450 *Connection between Comets and Shooting Stars.*
2480 *Zodiacal Light;* Gegenschein.

2500 **Stellar Universe.**

2510 *Fixed Stars.*
2520 Magnitude, Distance, Proper Motion, etc.
2540 Light, Heat.
2560 Spectrum; Types of Stellar Spectra.
2570 Physical Constitution; founded on Spectroscopic Observations.
2580 Proper Motion in Line of Sight.

2600 *Double and Multiple Stars.*
2610 Spectroscopic Double and Multiple Stars.
2620 *Star Clusters and Nebulæ* (including Milky Way).
2630 Variable Star Clusters.
2640 Spectroscopic Observations of Nebulæ.
2650 Physical Constitution of Nebulæ from Spectroscopic Observations.
2700 *Star Catalogues.*
2710 *Star Maps.*
2720 *Photographic Chart of Heavens.*
2730 *Photographs, Drawings of Stellar Objects.*
2750 *Catalogues of Lines in Spectra.*
2760 *Maps, Photographs of Spectra.*
2800 *Variable Stars* (including Temporary Stars).
2810 Types of Variable Stars.

ANCIENT ASTRONOMY AND ASTROLOGY.

2900 **Ancient Astronomy.**
2910 General.
2920 Further sub-divisions according to Countries and Epochs.

2950 **Astrology.**
Arranged as Ancient Astronomy.

CHRONOLOGY.

3000 **Measure of Time.**
3010 General.
3020 Methods.

3100 **Regulation of Time.**
3110 Solar Year.
3120 Lunar Year.
3130 Month.
3140 Week.
3150 Day.
3160 Sidereal Day.
3170 Mean and true Solar Day.
3180 Equation of Time, etc.
3190 Sub-division of Day.
Hours, Reckoning, Distribution.
3200 *Time Reckoning.*
3210 Local, Universal, Zone (Official) Time.
3300 *Calendars*—Julian, Gregorian, Church Almanac, Jewish, Mohamedan, Various.
3350 *Eras.*

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0040 Addresses, Lectures, Essays, Dissertations.
0050 Pedagogy.
0060 Institutions, Museums, Collections, Economics.
0070 Nomenclature.

METHODS OF OBSERVATION AND COMPUTATION.

0100 General.
0110 Instructions for Observers.
0120 Tables for Reductions.
0130 Computation of Mean Results.
0140 Analysis and Computation of Periodicity.

OBSERVATORIES AND INSTRUMENTS.

0200 General.
0210 Observatories—Construction and Equipment.
0220 Self-Recording Apparatus.
0230 Barometers.
0240 Aneroids.
0250 Thermometers.
0260 Screens.
0270 Hygrometers.
0280 Psychrometers—Dew-point Instruments.
0290 Evaporators.
0300 Rain Gauges.
0310 Anemometers.
0320 Actinometers.
0330 Sunshine Recorders.
0340 Nepheloscopes—Cloud measuring Instruments.
0350 Electrometers and other Electrical Apparatus.
0360 Kites.
0370 Balloons.
0380 Photographic Apparatus.
0390 Sundry, not specified.

PHYSICS OF ATMOSPHERE.

0400 **General.**
0410 Gaseous Constituents.
0420 Impurities and Dust.
0430 Extent.
0440 Dynamical and Thermodynamical Theories.

0450 **Cosmical Relations**—General.
0460 Solar Influences.
0470 Relations to Sun Spot Period.
0480 Lunar Influences.
0490 Planetary Influences.

0500 **Optical Phenomena**—General.
0510 Coloration of Sky.
0520 Polarization—Reflection—Refraction—Mirage.
0530 Rain Band.
0540 Halos—Coronæ—Parhelia.
0550 Rainbows, Solar.
0560 Rainbows, Lunar.
0570 Fog-bows.

ATMOSPHERIC PRESSURE.

0700 General.
0710 Distribution at Earth's Surface—Isobars.
0720 Distribution, Vertical.

0730 Computations of Altitude by Barometric Observations
0740 Computations of Altitude by Thermometric Observations.
0750 Variations and Oscillations—Periodical.
0760 Variations and Oscillations—Non-periodical.
0770 Waves due to Volcanic or other Disturbances.

TEMPERATURE AND RADIATION.

0800 **Atmospheric**—General.
0810 Distribution at Earth's Surface—Isotherms.
0820 Distribution, Vertical.
0830 Variations, Periodical.
0840 Variations, Secular or Non-periodic.

0850 **Earth Temperature**—Surface.
0860 Earth Temperature—Vertical Variation.
0870 Frozen Soil.

0880 **Sea Temperature**—Surface.
0890 Sea Temperature—Vertical Variation.
0900 Frozen Sea.

0910 **River and Lake** Temperature.
0920 Springs—Temperature.

0930 **Solar Radiation.**
0940 Solar Radiation—Secular Change.
0950 Sunshine.
0960 Atmospheric Absorption of Solar Heat.

0970 **Terrestrial Radiation.**
0980

AQUEOUS VAPOUR AND RAIN.

1000 **Vapour**—General.
1010 Vapour Tension.
1020 Humidity.
1030 Vapour—Distribution, Vertical.
1040 Vapour—Variation, Periodical.
1050 Evaporation.
1060 Dew Formation.
1070 Fog Formation and Distribution.
1080 Cloud Formation.
1090 Cloud Varieties of Form.
1100 Cloud Altitudes.

1150 **Rain**—General.
1160 Composition of Rain Water.
1170 Condensation—Efficient Causes of.
1180 Distribution—Geographical.
1190 Variation due to Altitude above Surface.
1200 Periodicity.
1210 Excessive Falls.
1220 Droughts.
1230 Rain without Clouds.
1240 Showers of Miscellaneous Matter.

1260 **Hail.**
1270 Snow.
1280 Hoar-Frost.

WIND.

1300 **Wind**—General.
1310 Circulation of the Atmosphere.
1320 Wind Relation to Atmospheric Pressure—Gradients.
1330 Velocity at Earth's Surface.
1340 Velocity—Variation with Height above Surface.
1350 Upper Currents.
1360 Pressure exerted by Wind.

1400 **Constant and Local Winds.**
1410 Trade Winds.
1420 Regions of Calm.

1450 **Periodical Winds**—General.
1460 Monsoons.
1470 Land and Sea Breezes.
1480 Mountain and Valley Winds.

1500 **Cyclones and Anticyclones**—General.
1510 Cyclonic Storms—their Laws.
1520 Cyclonic Storms—Distribution, Geographical.
1530 Whirlwinds—Tornadoes.

1550 **Storms**—General.
1560 Dust Storms.
1570 Waterspouts.

ATMOSPHERIC ELECTRICITY.

1600 General.
1610 Potential—Variations due to Local Atmospheric Conditions.

1620 Potential—Periodical Variations.
1630 Lightning and other Discharges.
1640 Thunderstorms.
1650 Aurora.
1660 Aurora periodicity.

CLIMATOLOGY AND WEATHER.

1700 **General.**
1710 Agricultural.
1720 Phenological.
1730 Hygienic.

1750 **Weather Forecasting.**
1760 Weather Prognostics.
1770 Synoptical Charts.

1800 **Meteorological Registers**—General.
1810 Registers giving Hourly Mean Values.
1820 Registers—Daily Mean Values.
1830 Weather Reports—Daily.
1840 Weather Reports for Longer Periods.
1850 Meteorological Log-books.
1860 Non-instrumental Records.
1870 Meteorological Charts.

When necessary the topographical symbols used in the Geography schedule may be added to any of the numbers, and used in conjunction with them.

*TERRESTRIAL MAGNETISM. THE COMPASS. EARTH CURRENTS.

3000 General.
3010 Magnetic Observatories. Methods of Measuring the Values and Variations of the Magnetic Elements.
3020 Magnetic State of the Surface of the Earth. Surveys. Isomagnetics and Gaussian Coefficients.
3030 Secular Changes.
3040 Diurnal and other Periodic Magnetic Variations.
3050 Magnetic Storms.
3060 Relations between Terrestrial Magnetism and the Heavenly Bodies.
3070 Relations between Terrestrial Magnetism and Geology, Earth-Currents, etc.
3080 Theories of Terrestrial Magnetism.
3090 Theory of the Compass. Magnetism of Ships.
4100 Earth Currents.

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* To be sold separately.

ROYAL SOCIETY OF LONDON.

International Catalogue of Scientific Literature.

(G.) MINERALOGY, PETROLOGY, CRYSTALLOGRAPHY.

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00 Philosophy.
01 History. Biography.
02 Periodicals. Reports of Institutions, Societies, Congresses, etc.
03 General and Special Treatises, Text Books, Dictionaries, Bibliographies, Tables of Constants or Data.
04 Addresses, Lectures, Essays, Dissertations.
05 Pedagogy.
06 Institutions, Museums, Collections, Economics.
07 Nomenclature.

MINERALOGY.

10 **General Mineralogy.**
11 Physical and Morphological.
12 Chemical.
13 Modes of Occurrence, etc.
14 Alteration.

15 Pseudomorphs.
16 Artificial.
17 Minerals in Rocks.
18 Economic Mineralogy, Mines, Ores, Building Materials.
19 Precious Stones.
20

30 **Determinative Mineralogy.**

31 Physical and Morphological.
32 Chemical.

40 **New Mineral Names.**

50 **Descriptive Mineralogy.** (Alphabetical List of Names.)

60 **Geographical Distribution.**
[Localities to be indicated by topographical symbols, as given in the Geography Schedule.]

70 **Meteorites.**

71 Structure, etc.
72 Minerals of.
73 Alphabetical List of.

PETROLOGY.

80 General.
82 Igneous rocks (alphabetically arranged).
83 Sedimentary rocks (including those of organic or chemical origin).
84 Crystalline schists and metamorphic rocks.
85 Unclassified rocks.
87 Analysis (chemical) of rocks.
[Localities to be indicated by topographical symbols as given in the Geography Schedule.]

CRYSTALLOGRAPHY.

100 **Geometrical and Mathematical Crystallography.**

110 Symmetry, Systems, etc.
120 Methods of Calculation, Formulæ, Notation, etc.
130 Projection, and Drawing of Crystals.
140 Theories of Crystal Structure.
150 Miscellaneous.

200 **Crystal Structure and Growth.**

210 Irregularities in Crystals, Variation in Angles, Vicinal Faces, Character of Faces.
220 Twinning, Gliding Planes, etc. Regular Grouping of Crystals.
230 Pseudosymmetry, including "Optical Anomalies."
240 Growth of Crystals, Crystallites, etc. Artificial production of Crystals.

300 **Physical (excluding Optical) Crystallography.**

310 Cohesion, Elasticity, Cleavage, Hardness, etc.
320 Etching.
330 Thermal Properties.
340 Electric Properties.
350 Magnetic Properties.
360 Other Physical Properties.

400 **Optical Crystallography.** (*See* also 23, 62.)

410 Absorption.
420 Refraction and Birefringence.
430 Circular Polarisation.
440 Other Optical Properties.

500 **Chemical Crystallography.**

510 Isomorphism.
520 Polymorphism.
530 Morphotropy.
540 Stereochemistry, Optically Active and Racemic Compounds.

600 **Determinative Crystallography.**

610 Goniometric Measurements.
620 Optical Measurements.
630 Apparatus.

700 **Descriptive Crystallography.**

Inorganic substances, exclusive of minerals, arranged under formulæ.

750 **Descriptive Crystallography.**

Organic compounds, arranged either under formulæ or grouped, as in Chemistry, under Hydrocarbons, Acids, etc.

ROYAL SOCIETY OF LONDON.

International Catalogue of Scientific Literature.

(H.) GEOLOGY.

00 Philosophy.
01 History. Biography.
02 Periodicals. Reports of Institutions Societies, Congresses, etc.
03 General and Special Treatises, Text Books, Dictionaries Bibliographies, Tables of Constants or Data.
04 Addresses, Lectures, Essays, Dissertations.
05 Pedagogy.
06 Institutions, Museums, Collections, Economics
07 Nomenclature.

PHYSICAL.

10 General.
15 Glacial Geology.
20 Volcanic Geology.
25 Seismic Geology (including elevation and depression).

TECTONIC.

28 Denudation, sedimentation, and deposition.
30 Stratification and field (structural) features of rocks (including outcrops, dips, strikes, lamination, folds, dislocations, faults, jointing, and cleavage).
32 Orogeny.

STRATIGRAPHICAL.*

35 General.
40 Archæan.
45 Palæozoic.
50 (1) Lower (Cambrian, Ordovician [Lower Silurian], and Silurian [Upper Silurian]).
55 (2) Upper (Devonian, Carboniferous, and Permian)
60 Mesozoic (Secondary).
65 (1) Triassic.
70 (2) Jurassic.
75 (3) Cretaceous.
80 Cænozoic (Tertiary).
85 (1) Lower (Eocene and Oligocene).
90 (2) Upper (Miocene and Pliocene).
95 Pleistocene and recent.

98 **Maps.**
99 Surveying.

* Smaller stratigraphical divisions than those adopted in this Schedule are probably desirable, but it is very difficult to devise a scheme that would meet with general acceptance. If the divisions accepted for the International Geological Map of Europe are used, the additional numbers required can be easily intercalated.

Illustrative Specimen Plan of Arrangement for combination of Geological and Topographical Subdivisions.

d. EUROPE AND MEDITERRANEAN ISLANDS.

GEOLOGY. *Stratigraphical.*	*da.* Scandinavia.	*db.* Russia in Europe.	*dc.* German Empire.	*dd.* Holland, Belgium, Luxemburg.	*de.* British Islands.	*df.* France and Corsica.	*dg.* Spain and Portugal.	*dh.* Italy, Sicily, and Sardinia.	*di.* Switzerland—the Alps.	*dk.* Austria-Hungary.	*dl.* Balkan Peninsula.	*dm.* Mediterranean and Islands.	*dn.* Black Sea.	*do.* Baltic and Islands.
35. General	35*da*	35*db*	35*dc*	35*dd*	35*de*	35*df*	35*dg*	35*dh*	35*di*	35*dk*	35*dl*	35*dm*	35*dn*	35*do*
40. Archæan	40*da*	40*db*	40*dc*	40*dd*	40*de*	40*df*	40*dg*	40*dh*	40*di*	40*dk*	40*dl*	40*dm*	40*dn*	40*do*
45. Palæozoic	45*da*	45*db*	45*dc*	45*dd*	45*de*	45*df*	45*dg*	45*dh*	45*di*	45*dk*	45*dl*	45*dm*	45*dn*	45*do*
50. „ Lower ..	50*da*	50*db*	50*dc*	50*dd*	50*de*	50*df*	50*dg*	50*dh*	50*di*	50*dk*	50*dl*	50*dm*	50*dn*	50*do*
55. „ Upper	55*da*	55*db*	55*dc*	55*dd*	55*de*	55*df*	55*dg*	55*dh*	55*di*	55*dk*	55*dl*	55*dm*	55*dn*	55*do*
60. Mesozoic (Secondary) ..	60*da*	60*db*	60*dc*	60*dd*	60*de*	60*df*	60*dg*	60*dh*	60*di*	60*dk*	60*dl*	60*dm*	60*dn*	60*do*
65. „ Triassic	65*da*	65*db*	65*dc*	65*dd*	65*de*	65*df*	65*dg*	65*dh*	65*di*	65*dk*	65*dl*	65*dm*	65*dn*	65*do*
70. „ Jurassic	70*da*	70*db*	70*dc*	70*dd*	70*de*	70*df*	70*dg*	70*dh*	70*di*	70*dk*	70*dl*	70*dm*	70*dn*	70*do*
75. „ Cretaceous ..	75*da*	75*db*	75*dc*	75*dd*	75*de*	75*df*	75*dg*	75*dh*	75*di*	75*dk*	75*dl*	75*dm*	75*dn*	75*do*
80. Cænozoic (Tertiary) ..	80*da*	80*db*	80*dc*	80*dd*	80*de*	80*df*	80*dg*	80*dh*	80*di*	80*dk*	80*dl*	80*dm*	80*dn*	80*do*
85. „ Lower	85*da*	85*db*	85*dc*	85*dd*	85*de*	85*df*	85*dg*	85*dh*	85*di*	85*dk*	85*dl*	85*dm*	85*dn*	85*do*
90. „ Upper	90*da*	90*db*	90*dc*	90*dd*	90*de*	90*df*	90*dg*	90*dh*	90*di*	90*dk*	90*dl*	90*dm*	90*dn*	90*do*
95. Pleistocene and Recent ..	95*da*	95*db*	95*dc*	95*dd*	95*de*	95*df*	95*dg*	95*dh*	95*di*	95*dk*	95*dl*	95*dm*	95*dn*	95*do*
98. Maps	98*da*	98*db*	98*dc*	98*dd*	98*de*	98*df*	98*dg*	98*dh*	98*di*	98*dk*	98*dl*	98*dm*	98*dn*	98*do*

ROYAL SOCIETY OF LONDON.

International Catalogue of Scientific Literature.

(I.) GEOGRAPHY (PHYSICAL AND MATHEMATICAL).

00 Philosophy.
01 History. Biography.
02 Periodicals. Reports of Institutions, Societies, Congresses, etc.
03 General and Special Treatises, Text Books, Dictionaries, Bibliographies, Tables of Constants or Data.
04 Addresses, Lectures, Essays, Dissertations.
05 Pedagogy.
06 Institutions, Museums, Collections, Economics.
07 Nomenclature.

I.—TOPOGRAPHICAL CLASSIFICATION.

[To be used in connexion with Geography, Geology, Botany, Zoology, &c.]

1.—MAIN DIVISIONS.

a. The Earth as a whole.
b. Land as a whole.
c. Ocean as a whole.
d. Europe and Mediterranean Islands.
e. Asia and Malay Archipelago, Celebes and Timor inclusive.
f. Africa and Madagascar.

g. North America to boundary between United States and Mexico.
h. Mexico, Central and South America, and West Indian Islands.
i. Australia, Tasmania and New Zealand, with New Guinea, Gnolo, and Moluccas to west, and including the Solomon Islands, New Hebrides, and New Caledonia to east.
k. Arctic: Greenland and the area north of the Arctic Circle, or of the coasts of Continental America, Asia, and Europe, whichever is farther north.
l. Atlantic and Islands from Arctic Circle to Lat. 45° S.—the southern portion bounded on the east by the meridian 20° E. of Greenwich, south of the coast of Africa; and on the west by the coast of South America.
m. Indian Ocean and Islands limited on the south by Lat. 20° S; on the west by the meridian 20° E. of Greenwich; on the east by the coast of Australia and the meridian 147° E. of Greenwich.
n. Pacific and Islands from the Arctic Circle to Lat. 45° S., and between the meridian 174° E. of Greenwich and the coast of South America.
o. Antarctic: the area south of 45° S. except the Falkland Islands and the southern parts of South America and New Zealand; but including the islands of New Amsterdam and St. Paul.

N.B.—As a general rule, Islands more than 100 miles from the continent to be classed as Oceanic, unless specially excepted.

2. SUB-DIVISIONS.

d. Europe and Mediterranean Islands.

da. Scandinavia: Sweden, Norway, Denmark, Iceland, Faeroes.
db. Russia in Europe.
dc. German Empire.
dd. Holland; Belgium; Luxemburg.
de. British Islands.
df. France and Corsica.
dg. Spain and Portugal.
dh. Italy: Sicily and Sardinia.
di. Switzerland; the Alps.
dk. Austria-Hungary (Bosnia and Herzegovina included).
dl. Balkan Peninsula (Turkey in Europe, Roumania, Bulgaria, Servia, Montenegro, and Greece).
dm. Mediterranean and Islands (excluding Sicily, Sardinia, and Corsica).
dn. Black Sea.
do. Baltic and Islands.

e. Asia and Malay Archipelago.

ea. Asiatic Russia.
eb. China and Dependencies: Tibet; Corea.
ec. Japanese Islands; Formosa.
ed. Cochin China: Tonquin, Annam.
ee. Siam.
ef. British India: Himalaya; Burma; Ceylon.
eg. Malay Peninsula from Isthmus of Kra and Archipelago to Wallace's line, including Celebes and Timor, with the Philippines and China Sea.
eh. Persia; Afghanistan; Baluchistan.
ei. Asiatic Turkey; Arabia.
ek. Caspian.
el. Persian Gulf.

f. Africa and Madagascar.

fa. Mediterranean States—Marocco, Algiers, Tunis, Tripoli.
fb. N.E. Africa; Egypt and Nile Valley to Lat. 10° N. Abyssinia; African Coast of Red Sea.
fc. Sahara and the French Sudan; Darfur, &c.
fd. West Africa, from Marocco to the Congo.
fe. Congo State and Angola.
ff. East Africa, from the Southern border of *b* to the Zambezi Socotra.
fg. South Africa—South of the Zambezi and of the boundary between Portuguese and German S.W. Africa.
fh. Madagascar and Comoro Group.
fi. Red Sea and Islands.

g. North America.

ga. Alaska.
gb. Canada as a whole.
gc. Canadian Dominion West (Yukon, British Columbia, Mackenzie, Athabasca, Alberta, Saskatchewan, Assiniboia).
gd. Canadian Dominion East; Newfoundland.
ge. The Laurentian Lakes.
gf. United States as a whole.
gg. North Eastern United States, East of Mississippi (Maine, Vermont, New Hampshire, New York, Massachusetts, Connecticut, Rhode Island, Pennsylvania, New Jersey, Ohio, Michigan, Wisconsin, Illinois, Indiana).
gh. South Eastern United States, East of Mississippi.
gi. Western United States, West of Mississippi.

h. Central and South America and West Indies.

ha. Mexico.
hb. Central America: Guatemala; Honduras; British Honduras; Salvador; Nicaragua; Costa Rica.
hc. West Indian Islands; Caribbean Sea; Gulf of Mexico.

hd. Guiana — British, Dutch, and French; Venezuela; Trinidad.
he. Columbia; Ecuador.
hf. Peru.
hg. Bolivia.
hh. Brazil.
hi. Argentina; Uruguay and Paraguay.
hk. Chili.
hl. Tierra del Fuego and neighbouring islands; Falkland Islands.
hm. The Andes.

i. Australasia.

ia. New Guinea with Islands from Wallace's line, including Gilolo, Amboina, Ceram.
ib. Bismarck Archipelago (New Britain, etc., to Solomon Islands inclusive).
ic. Australia as a whole.
id. Queensland.
ie. New South Wales.
if. Victoria.
ig. South Australia.
ih. West Australia.
ii. Tasmania.
ik. New Zealand.
il. New Caledonia, New Hebrides, and Loyalty Islands.

k. Arctic.

ka. Arctic Ocean.
kb. Greenland.
kc. Archipelago north of North America.
kd. Islands north of Europe and Asia.

l. Atlantic.

la. North Atlantic Ocean and Islands not otherwise specified.
lb. Azores; Canaries; Madeira; Cape Verde.
lc. South Atlantic and Islands.

m. Indian Ocean.

ma. Ocean and Islands N. of Equator.
mb. Ocean and Islands S. of Equator, including Mascarene Islands, Amsterdam, and St. Paul.

n. Pacific.

na. North Pacific Ocean (North of Equator).
nb. South Pacific Ocean (South of Equator).
nc. Behring Sea and Islands (Aleutian Archipelago, etc.).
nd. Sandwich Islands and scattered groups N. of Equator and E. of 180°.
ne. Ladrone, Pelew, Caroline and Marshall Groups, with other Islands N. of Equator and W. of 180°.

nf. Fiji Islands, Friendly Islands, Samoa, Ellice, Phœnix Islands, etc., west of Meridian 160° W. of Greenwich.
ng. Galapagos Islands.
nh. Society Islands, Low Archipelago, Marquesas, and other Islands of S. Pacific, east of Meridian 160° W. of Greenwich.

o. Antarctic.

oa. Antarctic Continent as a whole.
ob. S. Georgia, Sandwich Groups, and other Islands S. of S. Atlantic.
oc. Prince Edward Island, Crozets, Kerguelen, and other Islands S. of Indian Ocean.
od. Islands to Southward and South-east of New Zealand and Area South of Pacific.

II.—SUBJECT CLASSIFICATION.

Physical Geography.

10 The Earth generally. (Density. Gravitation. Heat Distribution, etc.).
12 Volcanic Phenomena.
13 Earth Movements.
20 The Form of Surface.
21 Terrestrial Relief.
22 Submarine Contours.
23 Mountains.
24 Plains.
25 Dunes. Æolian Formations.
26 Valleys.
27 Rocks. Minerals. Mines.
28 Fissures. Caverns.
29 Islands.
30 Coral Formations.
31 Snowfields. Glaciers. Icebergs.
40 The Ocean—area, depth.
41 Tides.
42 Currents. Waves.
43 Oceanic Deposits.
44 Temperature.
45 Salinity.
50 Land Waters.
51 Springs.
52 Rivers.
53 Lakes.
60 Climate.
61 Atmospheric Pressure.
62 Air Temperature.
63 Vapour Rain.
64 Winds.
65 Physical Atlases.

Mathematical Geography.

70 Geodesy, Surveying and Topography. Coast Surveys
75 Marine Surveys. Hydrography.
80 Determination of Latitude and Longitude.
81 Heights Measurement.
82 Soundings.
83 Projection of Sphere.
84 Cartography.
85 Time Reckoning.
86 Tables for Computation.
87 Surveying Instruments.
90 Navigation, Measurements of Time and Position.
95 Tides, Mathematical Discussion of.

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(K.) PALÆONTOLOGY.

0000 Philosophy.
0010 History. Biography.
0020 Periodicals. Reports of Institutions, Societies, Congresses, etc.
0030 General and Special Treatises, Text Books, Dictionaries, Bibliographies, Tables of Constants or Data.
0040 Addresses, Lectures, Essays, Dissertations.
0050 Pedagogy.
0060 Institutions, Museums, Collections, Economics.
0100 Distribution of Life (Animal and Vegetable) in Past Times.
0150 Zonal Palæontology; Mutations (Changes of Form in Successive Strata), etc.
0200 Evolution.

The numerical symbol to be used for Palæontological books and papers is obtained by a combination of the Geological stratigraphical number (two figures), with a number representing the subdivision of the animal or vegetable kingdom to which the fossil forms described belong. Thus a paper on Triassic Cephalopoda will have the symbol K 65, 44, one on Carboniferous ferns will be numbered K 55, 87.

The numbers for Zoological sub-divisions are identical with those used in the Zoological scheme. The numbers for Botanical sub-divisions are provisional, and may require alteration.

The alphabetical symbols for Topography can be added, if necessary. In this case a paper on Cretaceous Fishes from Asiatic Turkey would bear the symbol K 75, 14ei.

Palæozoology.	General, including strata of unknown age. 35	Lower Palæozoic. 50	Upper Palæozoic. 55	Triassic. 65	Jurassic. 70	Cretaceous. 75	Lower Cænozoic. Eocene Oligocene. 85	Upper Cænozoic. Miocene Pliocene. 90	Pleistocene and Recent. 95
02 General Palæozoology	35.02	50.02	55.02	65.02	70.02	75.02	85.02	90.02	95.02
04 *Vertebrata*	35.04	50.04	55.04	65.04	70.04	75.04	85.04	90.04	95.04
06 Mammalia	35.06	50.06	55.06	65.06	70.06	75.06	85.06	90.06	95.06
08 Aves	35.08	50.08	55.08	65.08	70.08	75.08	85.08	90.08	95.08
10 Reptilia	35.10	50.10	55.10	65.10	70.10	75.10	85.10	90.10	95.10
12 Batrachia	35.12	50.12	55.12	65.12	70.12	75.12	85.12	90.12	95.12
14 Pisces	35.14	50.14	55.14	65.14	70.14	75.14	85.14	90.14	95.14
16 Tunicata, Amphioxus, &c.	35.16	50.16	55.16	65.16	70.16	75.16	85.16	90.16	95.16
18 *Arthropoda*	35.18	50.18	55.18	65.18	70.18	75.18	85.18	90.18	95.18
25 Insecta	35.25	50.25	55.25	65.25	70.25	75.25	85.25	90.25	95.25
34 Myriopoda	35.34	50.34	55.34	65.34	70.34	75.34	85.34	90.34	95.34
36 Arachnida	35.36	50 36	55.36	65.36	70.36	75.36	85.36	90.36	95.36
38 Xiphosura, Eurypterida, Trilobita, &c. ..	35.38	50.38	55.38	65.38	70.38	75.38	85.38	90.38	95.38
40 Crustacea	35.40	50.40	55.40	65.40	70.40	75.40	85.40	90.40	95.40
42 *Mollusca*	35.42	50.42	55.42	65.42	70.42	75.42	85.42	90.42	95.42
44 Cephalopoda	35.44	50.44	55.44	65.44	70.44	75.44	85.44	90.44	95.44
46 Gastropoda, including Amphineura and Scaphopoda	35.46	50.46	55.46	65.46	70.46	75.46	85.46	90.46	95.46

48 Lamellibranchiata (Pelecypoda)	35.48	50.48	55.48	65.48	70.48	75.48	85.48	90.48	95.48
50 Brachiopoda	35.50	50.50	55.50	65.50	70.50	75.50	85.50	90.50	95.50
51 Bryozoa (Polyzoa)	35.51	50.51	55.51	65.51	70.51	75.51	85.51	90.51	95.51
55 Vermes	35.55	50.55	55.55	65.55	70.55	75.55	85.55	90.55	95.55
60 Echinodermata	35.60	50.60	55.60	65.60	70.60	75.60	85.60	90.60	95.60
62 Cœlenterata	35.62	50.62	55.62	65.62	70.62	75.62	85.62	90.62	95.62
63 Graptolithoidea	35.63	50.63	55.63	65.63	70.63	75.63	85.63	90.63	95.63
64 Porifera	35.64	50.64	55.64	65.64	70.64	75.64	85.64	90.64	95.64
66 Protozoa	35.66	50.66	55.66	65.66	70.66	75.66	85.66	90.66	95.66
68 Fossils of doubtful affinity or origin ..	35.68	50.68	55.68	65.68	70.68	75.68	85.68	90.68	95.68

Palæobotany.	35	50	55	65	70	75	85	90	95
70 General Palæobotany									
74 Dicotyledons	35.74	50.74	55.74	65.74	70.74	75.74	85.74	90.74	95.74
80 Monocotyledons	35.80	50 80	55.80	65 80	70.80	75.80	85.80	90.80	95 80
85 Gymnosperms	35.85	50.85	55.85	65.85	70.85	75.85	85.85	90.85	95.85
87 Vascular Cryptogams	35.87	50.87	55.87	65.87	70.87	75.87	85.87	90.87	95.87
90 Mosses and Hepaticæ	35.90	50.90	55.90	65.90	70.90	75.90	85.90	90.90	95.90
93 Characeæ	35.93	50.93	55.93	65.93	70.93	75.93	85.93	90.93	95.93
94 Algæ and Schizophyceæ	35.94	50.94	55.94	65.94	70.94	75.94	85.94	90.94	95.94
96 Lichens	35.96	50.96	55.96	65.96	70.96	75.96	85.96	90.96	95.96
97 Fungi, Bacteria, and Mycetozoa	35.97	50.97	55.97	65.97	70.97	75.97	85.97	90.97	95.97
99 Plants of unascertained position	35.99	50.99	55.99	65.99	70.99	75.99	85.99	90.99	95.99

(K.) Palæontology.

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ROYAL SOCIETY OF LONDON.

International Catalogue of Scientific Literature.

(L.) GENERAL BIOLOGY.

GENERAL.

0001 Philosophy.
0002 History.
0003 Biography.
0004 Bibliography.
0005 Text-Books, General Treatises.
0006 Dictionaries, Catalogues, Tables of Constants, General Classifications.
0007 Periodicals.
0008 Reports of Societies, Congresses, Observatories, Laboratories, etc.
0009 Collective Works, Fauna and Flora.
0010 Addresses, Lectures, Essays.
0011 Pedagogy.
0012 Institutions, Museums, Collections, etc.
0013 Economics.
0014 Nomenclature (including Rules of Nomenclature, Transliteration, etc.).

METHODS AND APPARATUS.

0050 General.
0100 Microscope.
0150 Spectrum Apparatus.
0200 Photography.
0250 Radiography.
0300 Microtome.
0350 Measuring and Weighing.
0400 Micro-Chemistry.
0450 Fixation.
0500 Staining Methods.
0550 Other Methods.

GENERAL MORPHOLOGY.

1000 General.
1100 Tectology (Structure of the Individual).
1200 Promorphology (Fundamental Principles of Structure).
1500 Teratology.

GENERAL PHYSIOLOGY.

2000 General.

Origin and Development of the Organism.

2050 Asexual Reproduction.
2100 Fission.
2150 Budding.
2300 Sexual Reproduction.
2350 Copulation.
2400 Fertilization.
2450 Parthenogenesis.
2550 Alternation of Generation.
2600 Hybridization.
2700 Inheritance.
3000 Variation.
4000 Mechanism of Development.
4100 Influence of Internal Agencies.
4200 ,, External Agencies.
4300 Theory of Descent.
4400 Phylogeny.
4500 Ontogeny.

Life of the Individual.

4700 Molecular Structure.
4800 Food and Assimilation.
4900 Metabolism.
5000 Respiration and Fermentation.
5100 Performance of Work in General.
5200 General Relations to External Conditions.
5300 Adaptation.
5400 Protective Mechanisms.
5500 Œcology.
5550 Symbiosis.
5600 Colonies

Decline.

5700 Senescence.
5800 Degeneration.
5900 Death.

GENERAL CYTOLOGY.

6000 General.

Structure and Composition of the Cell.

6100 General.
6200 Cytoplasm.
6300 Nucleus.
6400 Active Cell-Contents.
6450 Chloroplasts.
6500 Contractile Vacuoles.
6600 Other Cell-Contents.
6650 Reserve Material.
6750 Skeleton.
6900 Cell Membrane.

Physical Properties.

7000 Osmotic Pressure, etc.

Physiological Properties.

7300 General.
7350 Metabolism.
7400 Motion.
7500 Production of Heat.
7550 ,, Light.
7600 ,, Electricity.
7700 Irritability.
7800 Fatigue.
7900 Conductivity of Stimuli.
7950 Sensation.
8000 Division.

Influence of Physical and Chemical Agents.

8250 Light.
8300 Temperature.
8350 Electricity.
8400 Gravity.
8450 Other Physical Agents.
8500 Chemicals, including Colouring Matters.

Pathological Changes.

8600 General.
8700 Death.

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(M.) BOTANY.

The Primary Divisions adopted correspond to the recognised branches of the science of Botany. It has not been thought desirable to adopt a taxonomic arangement throughout, as in Zoology, because a large part of the work done in Botany is written from other than taxonomic points of view, and could not be readily classed under taxonomic headings. In particular, the whole subject of Vegetable Physiology is included under Botany, whilst Animal Physiology forms a distinct science by itself. On this account, in many cases cross references, by means of duplicate slips, will be necessary.

It is considered essential that all works on fossil plants should appear in the Botany scheme, as well as under the separate science of Palæontology (K). References to Palæobotanical works are intended to be distributed under their appropriate headings in the scheme, whether taxonomic or otherwise, such works being indicated by a special mark (such as a †), identical with that used to indicate fossils in Zoology. Thus a paper on the "Anatomy of the Stem of *Lepidodendron*" would be catalogued under 2040 (Anatomy of Stem), and under 6700 (Vascular Cryptogams), as well as in the Palæontological scheme. The *stratigraphical* grouping of entries relating to Fossils will, of course, be left exclusively to Palæontology.

0000 Philosophy.
0010 History. Biography.
0020 Periodicals, Reports of Institutions, Societies, Congresses, etc.
0030 General and Special Treatises, Text-books, Dictionaries, Bibliographies, Tables of Constants or Data.
0040 Addresses, Lectures, Essays, Dissertations.
0050 Pædagogy.
0060 Institutions, Museums, Collections, Economics.
0070 Nomenclature.

EXTERNAL MORPHOLOGY AND ORGANOGENY (INCLUDING TERATOLOGY).

1000 **Vegetative Organs.**
1050 Shoot.
1100 Stem.
1150 Leaf.
1200 Root.
1250 Thallus.
1300 Trichomes and Metamorphosed Members.
1350 **Reproductive Organs.**
1500 Flower and Inflorescence.
1550 Fruit.
1600 Seed.
1650 Sporangia.
1700 Vegetative Organs of Propagation.
1750 **Alternation of Generations.**
1800 **Teratology.**

ANATOMY, DEVELOPMENT, AND CYTOLOGY.

2000 **Vegetative Organs.**
2020 Shoot.
2040 Stem.
2060 Leaf.
2080 Root.
2100 Thallus.
2120 Trichomes and Metamorphosed Members.
2140 **Reproductive Organs.**
2200 Flower and Inflorescence.
2220 Perianth.
2240 Androecium.
2260 Gynœcium.
2280 Fruit.

2300 Seed.
2320 Sporangia (Cryptogamic).
2340 Sexual Organs (Cryptogamic).
2360 Vegetative Organs of Propagation.
2380 **Embryology.**
2450 **Anatomy and Development of Tissues.**
2500 Tegumentary Tissues (primary and secondary).
2520 Secretory Tissues.
2540 Mechanical Tissues.
2560 Ground-Tissue.
2580 Primary Vascular Tissues (including works on the Stele).
2600 Secondary Vascular Tissues.
2620 Meristems.
2640 **Cytology.**
2700 Cytoplasm (including Plastids).
2740 Nucleus and Nuclear Division.
2780 Plastids (including Starch, Crystals, Vacuoles, etc.).
2800 Vacuoles (and their contents).
2850 Cell-Wall.
2900 Cell-formation.

PHYSIOLOGY.

3000 **Physiology of the Vegetative Organs.**
3020 Physiology of Cells and Tissues.
3040 Absorption and Translocation of Water and Gases, and Adaptations thereto.
3060 Nutrition, and Adaptations thereto.
3080 Respiration, and Adaptations thereto.
3100 Fermentation and Zymolysis.
3120 Physiological Chemistry.
3140 Supply and Dissipation of Energy.
3160 Growth.
3180 Irritability and movements.
3200 Oecology (General Adaptations to Environment).
3220 Symbiosis.
3240 **Physiology of Reproduction.**
3500 Fertilization and its Conditions.
3550 Hybridization.
3600 Vegetative and Asexual Reproduction.
3650 Influence of the Environment on Reproduction.
3700 Dispersal, and its Mechanism.
3750 Germination.

PATHOLOGY.

4000 Diseases due to Malnutrition.
4050 Diseases due to Plants.

4100 Diseases due to Animals.
4150 Diseases due to other causes, or of unknown origin.
4200 Wounds and Mutilations.
4250 Reparative Processes.
4300 Galls.
4350 Treatment of Disease.

EVOLUTION.

4400 Heredity and Stability of Characters.
4500 Variation.
4600 Natural and Artificial Selection.
4650 Degeneration.
4700 Phylogeny.

TAXONOMY.

4750 Nomenclature.
4800 Collectors' Manuals.
5000 Botanic Gardens, Museums, Herbaria.

[In the ensuing numbers, 5400–7999, a slip for each ordinal name, and a slip for each generic name, is intended to be employed, the names of both orders and genera being arranged alphabetically in a single list, under each class; if the author mentions the order to which he refers a genus, then in the slip on which the generic name stands alphabetically, the name of the order is to be added in brackets, and under the order, in its alphabetic place, a cross-reference to such genus is to be made.

On each generic slip, if any new specific name has been introduced into the genus, the symbol "n.sp." should be added after the generic name; if the genus itself is proposed as new, "n.gen." should be added.]

5400 **Dicotyledons.**
6000 **Monocotyledons.**
6500 **Gymnosperms.**
6700 **Vascular Cryptogams.**
7000 **Mosses and Hepaticæ.**
7300 **Characeæ.**
7400 **Algæ and Schizophyceæ.**
7600 **Lichens.**
7700 **Fungi, Bacteria, and Mycetozoa.**
7900 **Plants of which the position is not ascertained by the Slip-maker.**

The Orders and Genera of Fossil Plants are to be arranged taxonomically with the others, a † or other distinguishing mark being prefixed.

GEOGRAPHIC DISTRIBUTION.

8000 **Distribution on Land.**

In this subdivision it is proposed to use the topographical system laid down in Geography. Europe is to include all Nova Zembla, Tropical Africa all Madagascar, and North America all Alaska and all Greenland.

9000 **Plankton (Pelagic Botany).**

Entries are to be grouped under the following areas.

9200 Arctic (*i.e.*, all within the Arctic Circle).
9300 North Atlantic.
9400 Tropical Atlantic.
9500 South Atlantic.
9600 North Pacific.
9700 Tropical Indo-Pacific.
9800 South Indo-Pacific.
9900 Antarctic, *i.e.*, all South of Lat. 60° S.

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(N.) ZOOLOGY.

EXPLANATORY.

Owing to the great extent of Zoology, and the consequent specialisation that occurs amongst its workers, and because also of the desire that parts of the Zoological Catalogue shall be complete each one in itself, it has been found necessary to divide Zoology into "Branches." These Branches, though primarily determined by the natural divisions of the animal kingdom, do not entirely correspond therewith, because of the great difference in the extent of the natural divisions. Some of these divisions (Phyla, or Classes) are consequently treated together, while others are divided into more than one Branch. When a division of this kind is adopted, there is also a Branch in which the divisions are still treated together as one whole, viz., Arthropoda, 2403–2431, and Vertebrata, 5203–5231. These two Branches will include only works of a wide scope. Twenty-nine Branches are adopted, under the numbers 0403 to 6031, and there is also a comprehensive Branch numbered 0203–0231.

The subject matter of Zoology proper (as distinguished from the mode of arrangement of the animals alluded to above) is arranged under eight heads (or great Subjects). These eight Subjects all recur under each of the twenty-nine Branches. Each Subject is indicated by a number, the terminal two digits of which are the same in every Branch. These great subjects will be found under 0203 to 0231.

Each great Subject is divided into sub-divisions which are not numbered.

INSTRUCTIONS.

In Zoology, there are to be three kinds of slips, viz. :—(1) Title-slips, (2) Subject-slips, (3) Systematic-slips. Each of these must be drawn up in a special fashion.

(1) *Title-slips.*—Each slip is to bear the author's name, the exact title of the work or paper, and the proper reference to the journal, or other book, in which it appears. In the case of works published apart, the place of publication and the number of pages and plates must be given.

The title-slips will be arranged by the Editor in the alphabetical order of the author's name. This name must therefore be placed first.

The title-slip should also bear one or more words to indicate the taxonomical position of the animal, or animals, treated of. The number of the Subject, or Subjects, it relates to should also be added.

In no case should two titles be written on the same slip. Even when two papers by one author appear in the same journal each should have a separate slip.

When a title-slip [or other slip] relates to fossil forms, it should be prominently marked †. If it relate to both fossil and recent forms, it should be marked †*.

(2) *Subject-slips.*—Each subject-slip should commence with the number allotted to the subject; this should be followed by the sub-division of the Subject to which it relates expressed in the words of the schedule. If it relates to some new sub-division, or one not included in the schedule, this should be given as if it were in the schedule, leaving the Editor to decide how it shall be dealt with. In no case must two numbered Subjects be placed on one slip.

The slips for the Subject Geography must bear both the number of the Branch referred to, and the symbol used in Topographical Geography; thus 0627 + J. dg.

(3) *Taxonomy and Systematic Slips.*—Whereas in the Titles the literature of Zoology is arranged according to the author, and whereas in the subject-slips proper it is treated according to the Biological subject, on the other hand it is treated in this Section according to animals dealt with. The systematic-slip is therefore to be a special kind of subject-slip.

In this department the slip must commence with the number of the Branch and Subject, and this must be followed by the name of the animal the slip relates to, then a statement in one or two words as to the way in which the animal is treated (" Anatomy," or " description" or " n.sp.," etc.), then comes the author's name, then the reference.

The basis of the systematic arrangement is the genus. In no case must matter relating to two genera be placed on the same slip.

When groups of wider comprehension than the genus have to be dealt with on the systematic-slips, the number of the Branch and Subject will, of course, be followed by the name of the group instead of that of the genus as above directed.

Every new genus must have a separate slip; the name of the new genus must be followed by the indication "n.gen.," a brief statement as to what it is allied to and some indication of the species it includes, followed by author's name and reference.

New sub-genera are to be treated in a similar manner to genera, except that "n.subgen." will be used, and the name of the genus of which it is a division will follow.

Slips relating to fossil forms are to be marked †, and slips relating to fossil and recent forms †* (the latter condition occurs only rarely in this division).

The mode in which the systematic-slips are to be framed will be seen by reference to the systematic pages of the "Zoological Record," or of the "Berichte," published in Wiegmann's Archiv fur Naturgeschichte.

The Editor's work in this Section will be one of much difficulty, but it will be greatly facilitated by the slip-maker placing at the end of each of these systematic-slips the name of the group of animals the slip refers to. The slip-writer can frequently do this with ease because it is indicated in the work before him. When the work gives no indication of the group (*i.e.*, Family, Sub-family or Tribe), and the slip-writer cannot from his own knowledge supply the deficiency, the slip-writer may point this out by writing at the end of the slip "position not indicated," or the sign ?, which the Editor will take to mean the above. The names of many of the groups that it is desirable to indicate are given in this Schedule, but it will be a great assistance to the Editor if more detailed information than this is given as to the systematic position.

The Editorial work will be greatly facilitated by using paper of three colours, viz., red for the Title-slips, green for the Subject-slips, and white for the Taxonomy and Systematic-slips.

The size of the slips may be about 13 cm. by 8 cm.

SAMPLE OF PREPARED SLIPS.

RED PAPER. TITLE-SLIP.

N.

BEDDARD, F. E.—Notes on the anatomy of a Manatee (*Manatus inunguis*) lately living in the Society's gardens. P. Zool. Soc. London, 1897, pp. 47–53. [*Mammalia, Sirenia.*] [**6007, 6031.**]

GREEN PAPER. SUBJECT-SLIP.

6007. N.

Anatomy, general, of *Manatus inunguis* BEDDARD, pp. 47–53, P. Zool. Soc. London, 1897.

WHITE PAPER. SYSTEMATIC-SLIP.

6031. N.

Manatus inunguis, Anatomy, BEDDARD, pp. 47–53, P. Zool. Soc. London, 1897.

Sirenia.

0203–0231. Comprehensive Zoology.

N.B.—The subjects enumerated under numbers 0203 to 0231 may recur in any one of the subsequent Branches. In the Catalogue only works that deal with several Branches will be registered under numbers 0203 to 0231; hence the term "Comprehensive Zoology."

0203 Hyperzoology.
Philosophy.
History. Biography.
General Treatises, Text-books, Dictionaries, Bibliographies, Tables of Constants or Data.
Addresses, Lectures, Essays, Dissertations, of a general character.
Pedagogy.
Institutions, Museums, Collections, Economics.
Nomenclature (principles of).

0207 Structure (or Morphology). [In general; or of more than one of the classes of animals.]

General; Comparative Anatomy; Special Anatomy and Histology, *e.g.*, Tegument and its Organs; Nervous System and Organs of Sense; Myology; Osteology; Dentition; Internal Skeletal Structures of Invertebrates; Alimentary System; Circulatory and Respiratory Organs; Blood, Lymph, Cœlomic Fluid, Chyle; Urino-genital System, Placenta to be mentioned. Special Glands; Excretory Organs; Reproductive Organs. Special External Characters; Colour. Rudimentary or Vestigial Organs, and Organs of uncertain nature.

0211 Physiology. [Of the Animal Kingdom, or of more than one of its Branches.]

[Physiology will be treated as a separate science. In Zoology it is therefore only necessary to collect those physiological memoirs that specially interest zoologists; hence a detailed division is superfluous, but the following may be cited as examples to come under this heading.]

Parthenogenesis; Pædogenesis; Dissogony; Hermaphroditism; Production of Sex; Production of Caste; Function of Sense Organs; Function of Special Structures, *e.g.*, of Glands; Environmental Effects; Regeration; Change of Function.

0215 Development. [General works on more than one of the Branches.]

Oogenesis and Ovum; Spermatogenesis and Spermatozoon; Phenomena of Fertilization; Embryology (special points should be mentioned when not too

numerous); Postembryonic Ontogeny; Metamorphosis; Alternation of Generations; Cycles of Generations; Changes during Life.

For Cell-structure, and Processes, refer to **L**, "General Biology, Cytology."

0219 Ethology. [Works dealing with one or more of the following subjects, and relating to more than one Branch of the Animal Kingdom.]

Habits; Migration; Hibernation; Parental Relations; Sexual Relations; Oviposition; Voice; Sound Production; Luminosity; Cavernicolous Animals; Pelagic and Deep-sea Animals; Instinct; Social Relations; Psychology; Gregariousness; Symbiosis; Parasitism; Protection; Colour and Habits; Defensive Processes; Resemblances (including Mimicry and Protective Resemblance); Ornament; Utility.

0223 Variation and Ætiology. [Works dealing with one or more of the following subjects and relating to more than one Branch of the Animal Kingdom.]

Substantive variation; size, proportions, form, colour, etc. Meristic variations; numerical [meristic proper]; homoeotic. Teratological. Bionomic variation; of fertility; of time of appearance; of maturity; of development; of habits.

Or alternatively or supplementally, with reference to treatment — descriptive, statistical, mathematical; geographical or stational.

Heredity. Crosses and Hybrids. In-breeding. Telegony. Evolution.

0227 Geographical Zoology.

Geographical Distribution. [Works relating to the principles and modes of Distribution.]

Topographical Zoology. [Works relating to the Fauna of one or more of the sub-divisions used in **J**, "Geography," and dealing with more than one of the Branches of Zoology.]

0231 Taxonomy or Classification in general.

[In this are to be placed works dealing with the principles of Zoological classification; works discussing the classification of more than one of the Branches; works dealing with the relations of the great groups of existing animals; Phylogenetic classification, *i.e.*, the relations in time of the great groups of animals. Works relating to the classification of only one of the Branches are to be dealt with in that Branch.]

0403–0431. Protozoa.

0403 Protozoa. Comprehensive and General Works.

0407 Protozoa. Structure.
[For sub-divisions, *see* 0207.]

0411 Protozoa. Physiology.
[For sub-divisions, *see* 0211.]

0415 Protozoa. Development.
[For sub-divisions, *see* 0215.]

0419 Protozoa. Ethology.
[For sub-divisions, *see* 0219.]

0423 Protozoa. Ætiology.
[For sub-divisions, *see* 0223.]

0427 Protozoa. Geography.
[For sub-divisions, *see* J, 1 & 2.]

0431 Protozoa. Taxonomy and Systematic.
Mycetozoa ; Rhizopoda ; Sporozoa ; Mastigophora ; Infusoria.

0603–0631. Porifera (or Spongida).

0603 Porifera. Comprehensive and General Works.

0607 Porifera. Structure.
[For sub-divisions, *see* 0207.]

0611 Porifera. Physiology.
[For sub-divisions, *see* 0211.]

0615 Porifera. Development.
[For sub-divisions, *see* 0215.]

0619 Porifera. Ethology.
[For sub-divisions, *see* 0219.]

0623 Porifera. Ætiology.
[For sub-divisions, *see* 0223.]

0627 Porifera. Geography.
[For sub-divisions, *see* J, 1 and 2.]

0631 Porifera. Taxonomy and Systematic.

0803–0831. Cœlenterata (or Cnidaria).

0803 Cœlenterata. Comprehensive and General Works.

0807 Cœlenterata. Structure.
[For sub-divisions, *see* 0207.]

0811 Cœlenterata. Physiology.
[For sub-divisions, *see* 0211.]

0815 Cœlenterata. Development.
[For sub-divisions, *see* 0215.]

0819 Cœlenterata. Ethology.
[For sub-divisions, *see* 0219.]

0823 Cœlenterata. Ætiology.
[For sub-divisions, *see* 0223.]

0827 Cœlenterata. Geography.
[For sub-divisions, *see* J, 1 and 2.]

0831 Cœlenterata. Taxonomic.
Graptolites. Hydromedusæ. Scyphomedusæ. Monticuliporidæ. Stromatoporidæ. Alcyonaria. Zoantharia. Ctenophora.

1003–1031. Echinodermata.

1003 Echinodermata. Comprehensive and General Works.

1007 Echinodermata. Structure.
[For sub-divisions, *see* 0207.]

1011 Echinodermata. Physiology.
[For sub-divisions, *see* 0211.]

1015 Echinodermata. Development.
[For sub-divisions, *see* 0215.]

1019 Echinodermata. Ethology.
[For sub-divisions, *see* 0219.]

1023 Echinodermata. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

1027 Echinodermata. Geography.
[For sub-divisions, *see* J, 1 and 2.]

1031 Echinodermata. Taxonomy and Systematic.
Cystoidea. Crinoidea. Blastoidea. Asteroidea. Ophiuroidea. Echinoidea. Holothuriodea.

1203–1231. Platyhelminthes. Mesozoa and *Trichoplax*.

1203 Platyhelminthes, etc. Comprehensive and General Works.

1207 Platyhelminthes. Structure.
[For sub-divisions, *see* 0207.]

1211 Platyhelminthes. Physiology.
[For sub-divisions, *see* 0211.]

1215 Platyhelminthes. Development.
[For sub-divisions, *see* 0215.]

1219 Platyhelminthes. Ethology.
[For sub-divisions, *see* 0219.]

1223 Platyhelminthes. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

1227 Platyhelminthes. Geography.
[For sub-divisions, *see* J, 1 and 2.]

1231 Platyhelminthes. Taxonomy and Systematic.
Turbellaria. Trematoda. Cestoda. Nemertinea. Mesozoa includes Dicyemidæ, Orthonectidæ. *Trichoplax* is isolated.

1403–1431. Nemathelminthes.

1403 Nemathelminthes. Comprehensive and General Works.

1407 Nemathelminthes. Structure.
[For sub-divisions, *see* 0207.]

1411 Nemathelminthes. Physiology.
[For sub-divisions, *see* 0211.]

1415 Nemathelminthes. Development.
[For sub-divisions, *see* 0215.]

1419 Nemathelminthes. Ethology.
[For sub-divisions, *see* 0219.]

1423 Nemathelminthes. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

1427 Nemathelminthes. Geography.
[For sub-divisions, *see* J, 1 and 2].

1431 Nemathelminthes. Taxonomy and Systematic.
Nematoda. Nematomorpha (or Gordiidæ). Acanthocephala.

1603–1631. Chætognatha. Rotifera. Gastrotricha. Kinorhyncha (or Echinodera).

1603 Chætognatha, etc. Comprehensive and General Works.

1607 Chætognatha, etc. Structure.
[For sub-divisions, *see* 0207.]

1611 Chætognatha, etc. Physiology.
[For sub-divisions, *see* 0211.]

1615 Chætognatha, etc. Development.
[For sub-divisions, *see* 0215.]

1619 Chætognatha, etc. Ethology.
[For sub-divisions, *see* 0219.]

1623 Chætognatha, etc. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

1627 Chætognatha, etc. Geography.
[For sub-divisions, *see* J, 1 and 2.]

1631 Chætognatha, etc. Taxonomy and Systematic.
The groups here included will all be treated separately, so that on each slip it should be stated which one, or more, is referred to.

1803–1831. Archiannelida. Polychæta. Myzostomaria. Oligochæta. Gephyrea. Phoronis. Hirudinea.

1803 Archiannelida, etc. Comprehensive and General Works.

1807 Archiannelida, etc. Structure.
[For sub-divisions, *see* 0207.]

1811 Archiannelida, etc. Physiology.
[For sub-divisions, *see* 0211.]

1815 Archiannelida, etc. Development.
[For sub-divisions, *see* 0215.]

1819 Archiannelida, etc. Ethology.
[For sub-divisions, *see* 0219.]

1823 Archiannelida, etc. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

1827 Archiannelida, etc. Geography.
[For sub-divisions, *see* J, 1 and 2.]

1831 Archiannelida, etc. Taxonomy and Systematic.
The groups here included will all be treated separately, so that on each slip it should be stated which one, or more, is referred to.

2003–2031. Brachiopoda. Polyzoa (or Bryozoa).

2003 Brachiopoda. Polyzoa. Comprehensive and General Works.

2007 Brachiopoda. Polyzoa. Structure.
[For sub-divisions, *see* 0207.]

2011 Brachiopoda. Polyzoa. Physiology.
[For sub-divisions, *see* 0211.]

2015 Brachiopoda. Polyzoa. Development.
[For sub-divisions, *see* 0215.]

2019 Brachiopoda. Polyzoa. Ethology.
[For sub-divisions, *see* 0219.]

2023 Brachiopoda. Polyzoa. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

2027 Brachiopoda. Polyzoa. Geography.
[For sub-divisions, *see* J, 1 and 2.]

2031 Brachiopoda. Polyzoa. Taxonomy and Systematic.

It should be stated on the slip whether it relates to Brachiopoda or Polyzoa, or both.
Polyzoa includes Ectoprocta and Entoprocta.

2203–2231. Mollusca.

2203 Mollusca. Comprehensive and General Works.

2207 Mollusca. Structure.
[For sub-divisions, *see* 0207.]

2211 Mollusca. Physiology.
[For sub-divisions, *see* 0211.]

2215 Mollusca. Development.
[For sub-divisions, *see* 0215.]

2219 Mollusca. Ethology.
[For sub-divisions, *see* 0219.]

2223 Mollusca. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

2227 Mollusca. Geography.
[For sub-divisions, *see* J, 1 and 2.]

2231 Mollusca. Taxonomy and Systematic.

Lamellibranchiata (or Pelecypoda). Scaphopoda. Amphineura.
Gastropoda, includes Prosobranchiata, Nucleobranchiata (or Heteropoda), Opisthobranchiata, Pteropoda, Pulmonata.
Cephalopoda, includes Nautiloidea, Ammonea, Dibranchiata.

2403–2431. Arthropoda. [Works relating to the following Branches taken together, or at any rate to several of them, viz., 2603 to 4831.]

2403 Arthropoda. Comprehensive and General Works.

2407 Arthropoda. Structure.
[For sub-divisions, *see* 0207.]

2411 Arthropoda. Physiology.
[For sub-divisions, *see* 0211.]

2415 Arthropoda. Development.
[For sub-divisions, *see* 0215.]

2419 Arthropoda. Ethology.
[For sub-divisions, *see* 0219.]

2423 Arthropoda. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

2427 Arthropoda. Geography.
[For sub-divisions, *see* J, 1 and 2.]

2431 Arthropoda. Taxonomy.
2431 will not include a systematic arrangement of Genera and Species.

2603–2631. Crustacea.

2603 Crustacea. Comprehensive and General Works.

2607 Crustacea. Structure.
[For sub-divisions, *see* 0207.]

2611 Crustacea. Physiology.
[For sub-divisions, *see* 0211.]

2615 Crustacea. Development.
[For sub-divisions, *see* 0215.]

2619 Crustacea. Ethology.
[For sub-divisions, *see* 0219.]

2623 Crustacea. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

2627 Crustacea. Geography.
[For sub-divisions, *see* J, 1 & 2.]

2631 Crustacea. Taxonomy and Systematic.
Entomostraca (= Cirripedia, Ostracoda, Copepoda, Phyllopoda).
Leptostraca.
Arthrostraca (or Edriophthalma) (= Amphipoda, Isopoda, Anisopoda).
[Malacostraca (= Thoracostraca + Arthrostraca).]
Thoracostraca (or Podophthalma) includes Decapoda, Schizopoda, Stomatopoda, Cumacea.

2803–2831. Trilobita. Xiphosura. Eurypterida. Pantopoda. Tardigrada. Lingualatulida.

2803 Trilobita, etc. Comprehensive and General Works on any one or more of these Groups.

2807 Trilobita, etc. Structure.
[For sub-divisions, *see* 0207.]

2811 Trilobita, etc. Physiology.
[For sub-divisions, *see* 0211.]

2815 Trilobita, etc. Development.
[For sub-divisions, *see* 0215.]

2819 Trilobita, etc. Ethology.
[For sub-divisions, *see* 0219.]

2823 Trilobita, etc. Variation and Ætiology.
[For sub-divisions, *see* 0213.]

2827 Trilobita, etc. Geography.
[For sub-divisions, *see* J, 1 and 2.]

2831 Trilobita, etc. Taxonomy and Systematic.

N.B.—On each slip should be indicated the one (or more) of the above groups it refers to.
Attention need not be given to divisions of any one of the groups.

3003–3031. Arachnida.

3003 Arachnida. General or Comprehensive Works.

3007 Arachnida. Structure.
[For sub-divisions, *see* 0207.]

3011 Arachnida. Physiology.
[For sub-divisions, *see* 0211.]

3015 Arachnida. Development.
[For sub-divisions, *see* 0215.]

3019 Arachnida. Ethology.
[For sub-divisions, *see* 0219.]

3023 Arachnida. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

3027 Arachnida. Geography.
[For sub-divisions, *see* J, 1 and 2.]

3031 Arachnida. Taxonomy and Systematic.

Arachnida consists of Scorpionida, Pedipalpi, Araneida, Solifugae, Chernetida (or Pseudoscorpiones), Phalangida (or Opiliones), Acarida (or Acari).
Tardigrada are treated under 2803–2831.

3203–3231. Prototracheata (or Onychophora).

3203 Prototracheata. Comprehensive and General Works.

3207 Prototracheata. Structure.
[For sub-divisions, *see* 0207.]

3211 Prototracheata. Physiology.
[For sub-divisions, *see* 0211.]

3215 Prototracheata. Development.
[For sub-divisions, *see* 0215.]

3219 Prototracheata. Ethology.
[For sub-divisions, *see* 0219.]

3223 Prototracheata. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

3227 Prototracheata. Geography.
[For sub-divisions, *see* J, 1 and 2.]

3231 Prototracheata. Taxonomy and Systematic.

Prototracheata includes only *Peripatus* and its divisions.

3603–3631. Myriopoda.

3603 Myriopoda. Comprehensive and General Works.

3607 Myriopoda. Structure.
[For sub-divisions, *see* 0207.]

3611 Myriopoda. Physiology.
[For sub-divisions, *see* 0211.]

3615 Myriopoda. Development.
[For sub-divisions, *see* 0215.]

3619 Myriopoda. Ethology.
[For sub-divisions, *see* 0219.]

3623 Myriopoda. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

3627 Myriopoda. Geography.
[For sub-divisions, *see* J, 1 and 2.]

3631 Myriopoda. Taxonomy and Systematic.

Myriopoda consists of Chilopoda, Diplopoda (=Pselaphognatha and Chilognatha), Symphyla (or Scolopendrella), Pansopoda.

3603-3631. Aptera (or Apterygogenea). Anoplura. Mallophaga. Thysanoptera (or Physopoda). Siphonaptera (or Aphaniptera).

N.B. — The numbers 3603–5031 are devoted to portions of Insecta. General works on Insecta as a whole should be noticed in 2403–2431, Arthropoda.

3603 Aptera, etc. Comprehensive and General Works.

3607 Aptera, etc. Structure.
[For sub-divisions, *see* 0207.]

3611 Aptera, etc. Physiology.
[For sub-divisions, *see* 0211.]

3615 Aptera, etc. Development.
[For sub-divisions, *see* 0215.]

3619 Aptera, etc. Ethology.
[For sub-divisions, *see* 0219.]

3623 Aptera, etc. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

3627 Aptera, etc. Geography.
[For sub-divisions, *see* J, 1 and 2.]

3631 Aptera, etc. Taxonomy and Systematic.
Aptera, proper, consists of Thysanura and Collembola.

3803-3831. Orthoptera, Neuroptera and Trichoptera.

The groups combined in 3803–3831 are only treated together for practical convenience. Each slip under these numbers must state which of the groups is referred to.

3803 Orthoptera, etc. General or Comprehensive Works.

3807 Orthoptera, etc. Structure.
[For sub-divisions, *see* 0207.]

3811 Orthoptera, etc. Physiology.
[For sub-divisions, *see* 0211.]

3815 Orthoptera, etc. Development.
[For sub-divisions, *see* 0215.]

3819 Orthoptera, etc. Ethology.
[For sub-divisions, *see* 0219.]

3823 Orthoptera, etc. Variation.
[For sub-divisions, *see* 0223.]

3827 Orthoptera, etc. Geography.
[For sub-divisions, *see* J, 1 and 2.]

3831 Orthoptera, etc. Taxonomy and Systematic.

The slips under 3803–3831 must at least state to which of the three groups (Orthoptera, Neuroptera, Trichoptera) each slip refers.

Orthoptera consists of Forficulidæ (or Dermaptera), Hemimeridæ, Blattidæ, Mantidæ, Phasmidæ, Gryllidæ, Locustidæ, Acridiidæ.

Neuroptera includes Planipennia, Embiidæ, Termitidæ, Psocidæ, Perlidæ, Ephemeridæ, Odonata.

Each slip relating to Neuroptera should also state which of these divisions it refers to.

Most of the Palæozoic Insects are to be dealt with in this Branch.

4003–4031. Hemiptera (or Rhynchota), excl. Anoplura, which are placed in 3603.

4003 Hemiptera. Comprehensive and General Works.

4007 Hemiptera. Structure.
[For sub-divisions, *see* 0207.]

4011 Hemiptera. Physiology.
[For sub-divisions, *see* 0211.]

4015 Hemiptera. Development.
[For sub-divisions, *see* 0215.]

4019 Hemiptera. Ethology.
[For sub-divisions, *see* 0219.]

4023 Hemiptera. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

4027 Hemiptera. Geography.
[For sub-divisions, *see* J, 1 and 2.]

4031 Hemiptera. Taxonomy and Systematic.

Consists of Hemiptera Heteroptera (family to be mentioned on each slip if possible), and Hemiptera Homoptera (mention families). (Phytophthires= Aphidæ Psyllidæ, Aleurodidæ Coccidæ are included in Hemiptera Homoptera).

4203–4231. Diptera (excl. Siphonaptera, which are placed in 3603–3631).

4203 Diptera. Comprehensive and General Works.

4207 Diptera. Structure.
[For sub-divisions, *see* 0207.]

4211 Diptera. Physiology.
[For sub-divisions, *see* 0211.]

4215 Diptera. Development.
[For sub-divisions, *see* 0215.]

4219 Diptera. Ethology.
[For sub-divisions, *see* 0219.]

4223 Diptera. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

4227 Diptera. Geography.
[For sub-divisions, *see* J, 1 and 2.]

4231 Diptera. Taxonomy and Systematic.
The slips should be marked with the name of the family of Diptera.

4403–4431. Lepidoptera.

4403 Lepidoptera. Comprehensive and General Works.

4407 Lepidoptera. Structure.
[For sub-divisions, *see* 0207.]

4411 Lepidoptera. Physiology.
[For sub-divisions, *see* 0211.]

4415 Lepidoptera. Development.
[For sub-divisions, *see* 0215.]

4419 Lepidoptera. Ethology.
[For sub-divisions, *see* 0219.]

4423 Lepidoptera. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

4427 Lepidoptera. Geography.
[For sub-divisions, *see* J, 1 and 2.]

4431 Lepidoptera. Taxonomy and Systematic.
Families to be mentioned
N.B.—Descriptions of larvæ and special life-histories are to be placed as a rule in 4431, not in 4415.
Rhopalocera and Heterocera, also Macrolepidoptera and Microlepidoptera are divisions. The families are very numerous. The family should be indicated on each slip.

4603-4631. Hymenoptera.

4603 Hymenoptera. Comprehensive and General Works.

4607 Hymenoptera. Structure.
[For sub-divisions, *see* 0207.]

4611 Hymenoptera. Physiology.
[For sub-divisions, *see* 0211.]

4615 Hymenoptera. Development.
[For sub-divisions, *see* 0215.]

4619 Hymenoptera. Ethology.
[For sub-divisions, *see* 0219.]

4623 Hymenoptera. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

4627 Hymenoptera. Geography.
[For sub-divisions, *see* J, 1 and 2.]

4631 Hymenoptera. Taxonomy and Systematic.

The following are divisions of Hymenoptera:—Aculeata = Anthophila (Apidæ Andrenidæ), Vespidæ (Diploptera), Sphegidæ s.l. (Fossoria), Formicidæ (Heterogyna).—Tubulifera=Chrysididæ.—Parasitica =Trigonalidæ, Proctotrupidæ, Pelecinidæ, Chalcididæ, Ichneumonidæ, Braconidæ, Megalyridæ, Evaniidæ, Stephanidæ, Cynipidæ.—Sessiliventres (or Chalastogastra) = Cephidæ, Siricidæ, Oryssidæ, Tenthredinidæ.

4803-4831. Coleoptera [incl. Strepsiptera].

4803 Coleoptera. Comprehensive and General Works.

4807 Coleoptera. Structure.
[For sub-divisions, *see* 0207.]

4811 Coleoptera. Physiology.
[For sub-divisions, *see* 0211.]

4815 Coleoptera. Development.
[For sub-divisions, *see* 0215.]

4819 Coleoptera. Ethology.
[For sub-divisions, *see* 0219.]

4823 Coleoptera. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

4827 Coleoptera. Geography.
[For sub-divisions, *see* J, 1 and 2.]

4831 Coleoptera. Taxonomy and Systematic.
The name of the family referred to should be given on each slip.
The families are numerous. They are included in the Munich Catalogue of the Coleoptera, and (the subsequent additions) in "Cambridge Natural History," vol. vi.

5003–5031. Prochordata, viz., Amphioxus (or Leptocardii) Enteropneusta, Tunicata.

5003 Prochordata. Comprehensive and General.

5007 Prochordata. Structure.
[For sub-divisions, *see* 0207.]

5011 Prochordata. Physiology.
[For sub-divisions, *see* 0211.]

5015 Prochordata. Development.
[For sub-divisions, *see* 0215.]

5019 Prochordata. Ethology.
[For sub-divisions, *see* 0219.]

5023 Prochordata. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

5027 Prochordata. Geography.
[For sub-divisions, *see* J, 1 and 2.]

5031 Prochordata. Taxonomy and Systematic.
Mention which of the three groups the slip refers to.

5203–5231. Vertebrata. [Under this are to be included works relating to all or several of the classes dealt with in 5403–6031.]

5203 Vertebrata. Comprehensive and General Works.

5207 Vertebrata. Structure.
[For sub-divisions, *see* 0207.]

5211 Vertebrata. Physiology.
[For sub-divisions, *see* 0211.]

5215 Vertebrata. Development.
[For sub-divisions, *see* 0215.]

5219 Vertebrata. Ethology.
[For sub-divisions, *see* 0219.]

5223 Vertebrata. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

5227 Vertebrata. Geography.
[For sub-divisions, *see* J, 1 and 2.]

5231 Vertebrata. Taxonomy.
[No systematic enumeration is to be placed under 5431.]

5403-5431. Pisces [excl. of Leptocardii (or Amphioxus), for which see 5003-5031].

5403 Pisces. Comprehensive and General Works.

5407 Pisces. Structure.
[For sub-divisions, *see* 0207.]

5411 Pisces. Physiology.
[For sub-divisions, *see* 0211.]

5415 Pisces. Development.
[For sub-divisions, *see* 0215.]

5419 Pisces. Ethology.
[For sub-divisions, *see* 0219.]

5423 Pisces. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

5427 Pisces. Geography.
[For sub-divisions, *see* J, 1 and 2.]

5431 Pisces. Taxonomy and Systematic.

The divisions are Cyclostomi, Ostracodermi, Plagiostomi. Holocephali, Arthrodira, Dipnoi, Teleostomi (or Teleostei and Ganoidei, with the exception of Arthrodira and Ostracodermi).
The family should be mentioned.

5603-5631. Batrachia and Reptilia.

5603 Batrachia and Reptilia. Comprehensive and General Works relating to one or both Classes.

5607 Batrachia and Reptilia. Structure.
[For sub-divisions, *see* 0207.]

5611 Batrachia and Reptilia. Physiology.
[For sub-divisions, *see* 0211.]

5615 Batrachia and Reptilia. Development.
[For sub-divisions, *see* 0215.]

5619 Batrachia and Reptilia. Ethology.
[For sub-divisions, *see* 0219.]

5623 Batrachia and Reptilia. Variation and Ætiology.
[For sub-divisions, *see* 0223.]

5627 Batrachia and Reptilia. Geography.
[For sub-divisions, *see* J, 1 and 2.]

5631 Batrachia and Reptilia. Taxonomy and Systematic.

Batrachia (or Amphibia) consists of Stegocephala (or Labyrinthodontia), Apoda, Caudata (or Urodela), Ecaudata (or Anura).

Reptilia consists of Anomodontia, Rhynchocephalia, Plesiosauria, Ichthyosauria, Chelonia, Crocodilia, Dinosauria, Ornithosauria (or Pterosauria), Ophidia, Pythonomorpha, Rhiptoglossa, Lacertilia.

Each slip must say whether it relates to Batrachia or Reptilia, and should also mention the group or family it relates to.

5803-5831. Aves.

5803 Aves. Comprehensive and General Works.

5807 Aves. Structure.

[For sub-divisions, *see* 0207.]

5811 Aves. Physiology.

[For sub-divisions, *see* 0211.]

5815 Aves. Development.

[For sub-divisions, *see* 0215.]

5819 Aves. Ethology.

[For sub-divisions, *see* 0219.]

5823 Aves. Variation and Ætiology.

[For sub-divisions, *see* 0223.]

5827 Aves. Geography.

[For sub-divisions, *see* J, 1 and 2.]

5831 Aves. Taxonomy and Systematic.

[The divisions of Aves are as follows, in alphabetical arrangement :—Accipitres ; Ægyornithes ; Alcæ ; Alectorides (including *Cariama*) ; Anisodactylæ (including Podargidæ and *Steatornis*) ; Anseres (including Phœnicopteri and Palamediidæ) ; Apteryges ; Casuarii ; Coccyges ; Columbæ ; Crypturi ; Cypseli ; Dinornithes ; Fulicariæ ; Gallinæ ; Gaviæ ; Herodiones ; Heterodactylæ ; Impennes ; Limicolæ ; Odontolcæ Odontormæ ; Opisthocomi ; Passeres ; Pici ; Psittaci ; Pterocletes ; Pygopodes ; Rheæ ; Saururæ ; Steganopodes ; Stereornithes ; Striges ; Struthiones ; Tubinares ; Zygodactylæ.]

6003-6031. Mammalia.

6003 Mammalia. General and Comprehensive Works.

6007 Mammalia. Structure.

[For sub-divisions, *see* 0207.]

6011 Mammalia. Physiology.

[For sub-divisions, *see* 0211.]

6015 Mammalia. Development.

[For sub-divisions, *see* 0215.]

6019 Mammalia. Ethology.

[For sub-divisions, *see* 0219.]

6023 Mammalia. Variation and Ætiology.

[For sub-divisions, *see* 0223.]

6027 Mammalia. Geography.

[For sub-divisions, *see* J, 1 and 2.]

6031 Mammalia. Taxonomy and Systematic.

The main divisions of Mammalia are as follows, in alphabetical arrangement :—Carnivora ; Cetacea ; Chiroptera ; Edentata ; Insectivora ; Marsupialia ; Monotremata ; Multituberculata ; Primates ; Rodentia ; Sirenia ; Tillodontia ; Ungulata (Artiodactyla, Perissodactyla, Subungulata).

ROYAL SOCIETY OF LONDON.

International Catalogue of Scientific Literature.

(O.) HUMAN ANATOMY (INCLUDING GENERAL HISTOLOGY AND EMBRYOLOGY).

GENERAL.

0001 Philosophy.
0002 History.
0003 Biography.
0004 Bibliography.
0005 Textbooks, General Treatises.
0006 Dictionaries, Catalogues, Tables of Constants, General Classifications, etc.
0007 Periodicals.
0008 Reports of Societies, Congresses, Observatories, Laboratories, etc.
0009 Collective works, Fauna and Flora.
0010 Addresses, Lectures, Essays.
0011 Pedagogy.
0012 Institutions, Museums, Collections, etc.
0013 Economics.
0014 Nomenclature (including Rules of Nomenclature, Transliteration, etc.).

METHODS.

Anatomical Research.

0050 Research methods in general.
0060 Preservation of corpses and portions of same.
0070 Preparation.
0080 Fixation.
0090 Hardening for microscopic purposes.
0100 Embedding processes.
0110 Staining for microscopic purposes.
0120 Instruments, apparatus and special arrangements.
0130 Microscopes, accessory apparatus and auxiliaries.
0140 Microphotography.

0150 Microtomes and processes connected with them.
0160 Refrigerating and heating appliances; incubating apparatus.
0170 Models and drawings; graphic processes.
0180 Processes of injection.
0190 Procuring material; disinfection.

Anatomical Instruction.

0200 General.
0210 Preparations for use in teaching.
0220 Processes of demonstration.
0230 Projection apparatus.
0240 Dissecting room.
0250 Apartments for study.

CYTOLOGY AND HISTOLOGY.

0500 General.
0510 Morphology of the cell and its constituents.
0520 Origin and reproduction.
0530 Cell division.
0540 Growth and duration of life.
0550 Mutual relations of cells.
0590 Blood and lymph.
0600 Red blood corpuscles.
0610 Colourless ditto.
0620 Other formed constituents of blood and lymph.
0630 Formation and retrogression of blood and lymph cells.
0670 General characters of animal tissues.
0680 Cement substances.
0690 Pigments.
0700 Pigment formation.
0740 Epithelium.
0750 Epithelial cells.
0760 Epithelia.
0770 Epidermis.
0780 Horn formation.
0790 Development, regeneration, and degeneration of the epithelia.
0800 Cuticular formations.
0810 Hyaloid membranes.
0850 Connective tissues.
0860 Generalities on elements of connective tissue.
0870 Fibrillar connective tissue.
0880 Elastic tissue.
0890 Reticular connective tissue.
0900 Tendon tissues.
0910 Endothelia.
0920 Formation, development and transformation of connective tissue.

0960 Adipose tissues.
0970 Origin.
0980 Development.
0990 Degeneration.
1030 Cartilaginous tissues.
1040 Varieties.
1050 Origin, growth and decay.
1060 . Disappearance.
1100 Bony tissues.
1110 Varieties.
1120 Formation, growth and disappearance.
1130 Periosteum.
1140 Bone marrow.
1180 Muscular tissues.
1190 Smooth muscle fibres.
1200 Transversely striated muscle fibres.
1220 Tendons, aponeuroses, fasciæ, synovial sacs.
1230 Formation and degeneration of muscles.
1270 Nerve tissues.
1280 Nerve fibres.
1290 Ganglion cells.
1300 Neuroglia.
1320 Interstitial connective tissue.
1330 Nerve endings [sensory and motor].
1340 Formation and degeneration of elementary nerve constituents.

DEVELOPMENT IN GENERAL.

1500 General work on development of vertebrates.
1520 Theory of descent.
1540 Heredity and variation.
1560 Degeneration and regeneration.
1580 Experimental Embryology.
1600 The ovum.
1620 Formation.
1640 Maturation.
1660 Fertilization and segmentation of same.
1680 Sperma ; spermatogenesis.
1700 Embryogeny (germinal layers, gastrula, &c.).
1800 Organogeny (arranged by groups of organs).
1900 Fœtal membranes and placenta.
1920 Growth and senescence.
1940 Malformations, general.

SYSTEMATIC ANATOMY.

Skeletal system.

2020 General.
2040 Architecture.

2060 Special development and growth.
2080 Skeleton of the head.
2100 Of the trunk.
2120 Of the limbs.

Connections of the Bones.

2140 General.
2160 Joints.
2180 Ligaments.
2200 Mechanics of the joints.
2220 Abnormalities.

Muscular System.

2260 General.
2280 Special development and growth.
2320 Muscles of head.
2340 Trunk.
2360 Limbs.
2380 Abnormalities.
2400 Fasciæ.
2420 Synovial sacs.

Vascular System.

2460 General.
2480 Structure of walls of vessels.
2500 General development of vessels.
2520 Regeneration and degeneration of same.

Blood Vascular System.

2540 General.
2560 Heart (including development and malformations).
2580 Arteries.
2600 Veins.
2620 Capillaries.
2640 Abnormalities.

Lymphatic System.

2660 General
2680 Lymph vessels (including special development).
2700 Lymphatic capillaries.
2720 Lymphatic passages and spaces.

Lymphatic Glands.

2740 Structure and development.
2780 Special anatomy.

Local Organs.

2800 General.
2820 Spleen.
2840 Glomus caroticum.
2850 Glomus coccygeum.
2860 Thymus.

Alimentary Canal and its Appendages.

Organs of Digestion.

2880 General.
2890 Special development and growth.
2900 Mucous membranes and glands in general.
2920 Buccal cavity.
2940 Teeth.
2960 Tongue.
2980 Salivary glands.
3000 Pharynx.
3020 Œsophagus.
3040 Stomach.
3060 Intestines.
3080 Liver.
3100 Pancreas.
3120 Abdominal cavity.
3140 Peritoneum.
3160 Mesentery and omentum.
3180 Thyroid, parathyroid, etc.
3200 Abnormalities.

Organs of Respiration.

3260 General.
3280 Special development and later growths.
3300 Larynx.
3320 Air tubes.
3340 Lungs.
3360 Thoracic cavity, pleura, pericardium.
3380 Abnormalities.

Urogenital System.

3400 General.

Urinary Organs.

3420 General.
3440 Kidneys.
3460 Ureters.
3480 Bladder.
3500 Suprarenal bodies.

Male Organs of Sex.

3520 General.
3540 Testes.
3560 Epididymis.
3580 Paradidymis.
3600 Appendages of testes and epididymis.
3620 Seminal ducts, seminal vesicles.
3640 Ejaculatory ducts.
3660 Prostate.

3680 Cowper's glands.
3700 Male urethra.
3720 Penis.
3740 Scrotum.
3760 Spermatic cord.
3780 Serous membranes of the testes.

Female Organs of Sex.

3820 General.
3840 Ovary.
3860 Parovarium.
3880 Paroophoron, hydatids.
3900 Oviducts.
3920 Uterus.
3940 Vagina.
3960 Ligamentum latum.
3980 Parametrium.
4000 Pudendum.
4020 Female urinary channels.
4040 Glands of Bartolini.

Perineum.

4060 General.
4080 Muscles and fasciæ of the pelvic floor.

Nervous System.

4120 General.

Central Nervous System.

4160 General.
4200 Development and later growth.
4260 Spinal cord.

Brain.

4320 General.
4360 Weight.
4400 Rhombencephalon.
4440 Medulla oblongata.
4480 Pons.
4520 Cerebellum.
4560 Cerebrum.
4600 Mesencephalon.
4640 Thalamencephalon.
4680 Pituitary body.
4690 Telencephalon.
4720 Membranes of brain and cord.

Peripheral Nervous System.

4800 Cranial nerves.
4900 Spinal nerves.
4950 Sympathetic nervous system.

Integument.

5000 General.
5020 Development.
5040 External skin.
5060 Bursæ mucosæ.
5080 Hair.
5100 Nails.

Skin Glands.

5120 General.
5140 Sudoriparous, etc.
5160 Sebaceous.
5180 Mammary.

Organs of Sense.

Organ of Smell.

5220 General (including anatomy of nose).
5240 Morphology.
5260 Histology.
5280 Development.

Organ of Taste.

5300 General.
5320 Lingual.
5340 Pharyngeal.

Organ of Sight.

5360 General.
5380 Development.
5400 Eye-ball and optic nerve.
5420 Muscles of eye-ball, fasciæ and fatty tissues of the orbit.
5440 Lids, conjunctiva, lachrymal apparatus.

Organ of Hearing.

5460 General.
5480 Morphology.
5500 Histology.
5520 Development.
5540 Labyrinth and auditory nerve, bony labyrinth.
5560 Tympanic cavity.
5580 Auditory ossicles.
5600 Tympanic membrane.
5620 Eustachian tube.
5640 Mastoid cells.
5660 External ear, pinna.
5680 External meatus.

TOPOGRAPHICAL ANATOMY

6000 Regions of the body.
6250 External forms of body.
6500 Regional anatomy.
6750 Trunk.
7000 Neck.
7250 Head.
8000 Limbs, including inguinal and femoral canals.

ROYAL SOCIETY OF LONDON.

International Catalogue of Scientific Literature.

(P.) PHYSICAL ANTHROPOLOGY.

GENERAL.

0001 Philosophy.
0002 History.
0003 Biography.
0004 Bibliography.
0005 Text-Books, General Treatises.
0006 Dictionaries, Catalogues, Tables of Constants, General Classifications.
0007 Periodicals.
0008 Reports of Societies, Congresses, Observatories, Laboratories, etc.
0009 Collective Works, Fauna and Flora.
0010 Addresses, Lectures, Essays.
0011 Pedagogy.
0012 Institutions, Museums, Collections, etc.
0013 Economics.
0014 Nomenclature (including Rules of Nomenclature, Transliteration, etc.).

METHODS.

0050 General; Instructions.
0060 Measurement (Anthropometry, Craniometry); Instruments.
0070 Illustration (drawing apparatus, photography, radiography).
0080 Statistical methods.

GENERAL PHYSICAL ANTHROPOLOGY.

General Anatomical Anthropology.

0100 General.
0110 Bodily form and stature—
0120 External forms—
0130 Physiognomy.
0140 Stature—
0142 Giant growth.
0144 Dwarf growth.

0146 Pathological growth forms—
0148 Cretinism.
0150 Bodily proportions.
0160 Growth.
0170 Appearances related to age.
0200 Skeletal System—
0220 Skull (cranium and facial skeleton)—
0240 Measure.
0260 Capacity.
0280 Sexual characters.
0300 Zoological characteristics (animal resemblances, etc.).
0340 Deformation—
0350 Pathological.
0380 Artificial.
0400 Vertebral column—
0450 Caudal appendage.
0500 Shoulder girdle.
0550 Pelvis.
0570 Extremities—
0580 Hand.
0590 Foot.
0600 Muscular System.
0650 Vascular System.
0700 Nervous System—
0750 Brain: convolutions, weight.
0800 Spinal cord.
0900 Nerves.
1000 Integument—
1020 Skin.
1030 Finger prints.
1050 Hair:
1060 Distribution.
1070 Growth.
1090 Hyper- and hypotrichosis.
1100 Pigmentation—
(Incl. colour of hair and iris).
1200 Breasts—
1250 Form, size.
1270 Polymastia.
1300 Organs of Sense—
1350 Organ of hearing.
1360 External ear.
1380 Organ of smell.
1390 External nose.
1400 Eye—
1450 Eyelids, Mongolian eye.
1500 Alimentary Canal (organs of digestion and of respiration).
1600 Teeth.
1700 Urogenital System (urinary and sexual organs).
1750 External sexual parts.

General Physiological Anthropology.

2000 General.
2010 Bodily strength.
2050 Senses.
2100 Racial crossing.
2150 Puberty, fertility, birth.
2200 Heredity: Atavism.

Social Physical Anthropology.

2210 General.
2250 Various classes of population.
2300 Mentally diseased.
2350 Signs of degeneration.
2400 Criminal anthropology

Miscellaneous.

2500 Varia not properly placeable elsewhere.

SPECIAL PHYSICAL ANTHROPOLOGY.

3000 General.

Comparative (Zoological) Anthropology.

3100 General.
3120 Anatomy of the Anthropoids.
3150 Descent of man.

Prehistoric and Protohistoric Anthropology.

3200 General.
3300 First appearance of man.
3400 Tertiary man.
3500 Quaternary period.
3600 Palæolithic period.
3700 Neolithic period.
3800 { Bronze age.
3800 { Hallstadt and La Tène age.
3900 Oldest historical peoples.

Ethnological Anthropology.

Description of Peoples (arranged by countries).

4000 General.
4100 *Europe* (by countries).
4200 *Asia*—
4210 Siberia.
4220 Turkestan.
4230 Persia.
4240 Afghanistan.
4250 Baluchistan.
4260 Asia Minor, Syria, Arabia.
4270 India and Ceylon.

4280 Further India.
4290 Chinese Empire.
4300 Japan and Korea.
4310 Malay Archipelago.
4400 *Oceania*—
4450 Micronesia.
4460 Melanesia.
4480 Polynesia.
4500 *Australia.*
4600 *Africa*—
4650 North Africa.
4700 Egypt, Nubia, Egyptian Sudan, Abyssinia.
4800 East Africa.
4850 West Africa, Niger basin.
4900 Congo basin, etc.
4950 South Africa.
5000 *America*—
5100 North America.
5150 Central America and West Indies.
5200 South America.
9000 *System of Classification of Peoples.*
(Classification, relations of kinship.)

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(Q.) PHYSIOLOGY (INCLUDING PHARMACOLOGY AND EXPERIMENTAL PATHOLOGY).

PRIMARY DIVISIONS.

	BEGIN AT
PHYSIOLOGY IN GENERAL. THE ANIMAL CELL. THE ELEMENTARY TISSUES. REPRODUCTION AND DEVELOPMENT ..	Q. 0000
PHYSIOLOGICAL CHEMISTRY	Q. 1000
THE NERVOUS SYSTEM	Q. 2000
THE SENSES	Q. 3000
MUSCLE. NERVE. ELECTRO-PHYSIOLOGY ..	Q. 4000
THE BLOOD AND THE CIRCULATORY SYSTEM	Q. 5000
RESPIRATION. ANIMAL HEAT	Q. 6000
DIGESTION. ABSORPTION. METABOLISM ..	Q. 7000
THE URINARY APPARATUS. THE SKIN ..	Q. 8000
PHARMACOLOGY	Q. 9000

The accompanying alternative part of the Schedule (from 2400 to 3790) includes also Psychology.

PHYSIOLOGY IN GENERAL.

0000 Philosophy.
0010 History, Biography.
0020 Periodicals, Reports of Institutions, Societies, Congresses, etc.
0030 General and Special Treatises, Text-Books, Dictionaries, Bibliographies, Tables, etc.
0040 Addresses, Lectures, Essays, Dissertations.
0050 Pædagogy.
0060 Institutions, Museums, Collections, Economics.
0070 Nomenclature.
0080 Laboratory Construction.
0090 Experimental Methods and Instruments.

0100 **Physiology of the Organism as a Whole.**

0110 Philosophy. (Vitalism, Heredity, etc.)
0120 Conditions of Life. (Means of Attack and Defence, Maintenance, etc.)
0130 Immunity.
0150 Influence of Environment. (Chemotaxis, Galvanotaxis, etc. High Altitudes, etc.)
0160 Changes in the Animal during Life. (Growth, Puberty, Decay.)
0180 Death.

0200 **Physiology of the Cell and of Unicellular Organisms.**

0210 Structure of the Cell.
0211 Structure of the Cell Body.
0212 Structure of the Nucleus.
0213 Structure of the Centrosome, etc.
0220 Physical Properties of the Cell.
0224 Isotony and other Osmotic Phenomena of the Cell.
0225 Chemical Properties of the Cell.
0230 Metabolism of the Cell.
0235 Fermentative Activities of the Cell.
0240 Motor Phenomena of the Cell.
0250 Functions of different Parts of the Cell. (Nucleus, Centrosome, etc.)
0260 Phosphorescence.
0280 Pathological Conditions.
0285 Intracellular Parasites. Symbiosis.
0290 Action of Physical Agents.
0295 Action of Chemical Substances.

0400 **Physiology of the Tissues in General.**

0420 Physical Properties of Tissues. (Electrical Resistance, Imbibition, Conductivity to Heat, etc.)
0425 Chemical Properties of Tissues. (Reaction, Post-mortem Production of Acid, etc.)
0430 Transplantation and Regeneration of Tissue.
0480 Pathology.
0482 Degenerations.
0484 Tumours and Cysts.

0500 **The Connective Tissues.**

0510 Structure and Development.
0520 Physical Properties.
0525 Chemistry.
0530 Functions.
0580 Pathological Conditions.
0590 Action of Physical and Chemical Agents.

0800 **Reproduction and Development.**

0810 Cell Division.
0820 Asexual and Sexual Reproduction.
0830 The Testis and Spermatozoa.
0835 The Accessory Male Genital Organs.
0840 The Ovary and Ovum.
0845 The Accessory Female Genital Organs. (Uterus, etc.)
0850 Fertilization and Cross-Fertilization.
0860 Physiology of the Embryo.
0870 Physiology of Gestation.
0875 The Mammary and Allied Functions.
0880 Pathological Conditions of the Organs of Generation.
0885 Pathological Conditions of the Embryo.
0890 Action of Physical and Chemical Agents on the Organs of Generation.
0895 Action of Physical and Chemical Agents on the Embryo.

PHYSIOLOGICAL CHEMISTRY.

1000 **General Physiological Chemistry.**

1010 General Chemical Methods.
1030 General Chemical Composition of Animals.
1070 Topographical Distribution of Chemical Substances (*e.g.* Hydrogen Sulphide, Ammonia, Urea, Iodine).
1080 Physical Properties of Colloids.
1085 Permeability of Membranes.

1100 **Proteids and Allied Substances.**

1105 General.
1110 Classification.
1120 Physical Properties.
1122 Coagulation and Clotting.
1124 Crystallisation.
1130 Composition and Constitution.
1131 Reactions.
1134 Decompostion of Proteids.
1136 Synthesis of Proteids.
1140 Simple Proteids. (Eiweisskörper.)
1141 Proteids Coagulable by heat.
1145 Hydrolysed Proteids and Allied Substances. (*e.g.* Proteoses, Keratoses, Peptones.)
1150 Compound Proteids (Proteïde) and their Primary Decomposition Products.
1151 Nucleoproteids, Nucleins, Nucleic Acid, and Nucleons.
1153 Mucins and Mucoids.
1155 Hæmoglobin and its Compounds with Gases.
1156 Hæmatin and other Derivatives of Hæmoglobin.
1158 Hæmocyanin and similar Proteids.
1159 Other Compound Proteids. (*e.g.* Lardacein, Lecithalbumin, etc.)
1170 Albuminoids. (Keratin, Collagen, Elastin, Chitin, etc.)
1190 Compounds of Proteids and Allied Bodies. (*e.g.* with Acids, Bases, Halogens, Salts, etc.)

1200 **Enzymes.**

1220 Zymogens.
1200 Physical and Chemical Properties of Enzymes.
1230 Nature of Action of Enzymes.
1235 Catalytic Phenomena.
1240 Special Action of Enzymes. (Proteolytic, Amylolytic, Oxidative, Coagulative, etc.)

1250 **Toxins and Antitoxins.**

1260 Toxins.
1280 Antitoxins.

1300 **Pigments.**

1310 Bilirubin, its Allies and Derivatives, including urinary pigments.
1320 Melanins.
1330 Lipochromes.
1340 Visual Purple.
1360 Other Pigments of Vertebrata.
1370 Pigments of Invertebrata.

1400 **Carbohydrates.**

1405 General.
1410 Constitution and Composition.
1411 Reactions.
1416 Synthesis.
1420 Hexoses.
1422 Monosaccharids.
1424 Disaccharids.
1426 Polysaccharids.
1430 Other Carbohydrates. (Pentoses, etc.)
1440 Derivatives of Carbohydrates. (Glucosides, Glycuronic Acid, Glucosamine, etc.)

1500 **Fatty Acids, Fats and Allied Substances.**

1510 Carboxy Acids.
1540 Fats and Soaps.
1550 Phosphorised Fats. (Protagon, Lecithin, Jecorin, etc.)

1600 **Miscellaneous Organic Substances.**

1605 Alcohols.
1610 Amido-Acids.
1620 Urea.
1630 Alloxuric Substances.
1635 Uric Acid.
1640 Nitrogenous Bases.
1648 Protamines.
1649 Ptomaines and Leucomaines.
1650 Bile Acids.
1660 Aromatic Compounds.
1670 Organic Sulphur-Compounds.
1680 Substances of uncertain Composition. (*e.g.*, Iodothyrin, etc.)

1800 **Foods in General.**

1810 Diet. Construction of Dietaries.
1815 Preparation of Food (Cooking, Artificially Digested Food, etc.).

1820 **Animal Foods.**

1830 Milk.
1831 Properties and Composition.
1832 Proteids of.
1833 Fats of.
1834 Carbohydrates of.
1835 Salts and Gases of.

1836 Other Constituents of.
1837 Souring and Fermentation Changes in.
1838 Colostrum.
1839 Preparations from Milk. Cream, Butter, Cheese, etc.
1840 Eggs.
1850 Meat (Flesh).
1855 Preparations from Meat (Soup, Beef-tea, etc.).
1860 Other Animal Foods (Liver, Thymus, etc.).
1865 Gelatin.

1870 **Vegetable Foods.**

1872 Flours and Bread.
1875 Other Vegetable Foods.

1880 **Other Foods.**

1881 Water.
1882 Salts.
1884 Alcohol.
1885 Tea, Coffee, Cocoa, etc.

NERVOUS SYSTEM.

2000 **General.**

2010 General Structure and Development.
2020 Physical and Chemical Properties of Nervous Tissue.
2027 Chemical Changes Accompanying Activity.
2030 The Neuron.
2031 Structure and Development.
2033 General Functions.
2034 Changes during Activity.
2038 Pathological Changes.
2039 Action of Changes in Environment.
2040 Reflex Action in General.
2045 Reflex Reaction Time.
2050 Muscular Co-ordination.
2060 General Nature of Inhibition.
2070 Trophic Action of Nervous System.
2090 Action of Physical and Chemical Agents upon the Nervous System.
2091 Shock.

2100 **Nervous System in Invertebrata.**

2200 **Cerebro-Spinal Nerves. Origin, Connections, Distribution, Afferent and Efferent Functions.**

2201 Olfactory Nerve.
2202 Optic Nerve.
2203 Third Cranial Nerve.

2204 Fourth Cranial Nerve.
2205 Fifth Cranial Nerve.
2206 Sixth Cranial Nerve.
2207 Seventh Cranial Nerve.
2208 Eighth Cranial Nerve (Auditory and Vestibular).
2209 Ninth Cranial Nerve.
2210 Tenth Cranial Nerve.
2211 Eleventh Cranial Nerve.
2212 Twelfth Cranial Nerve.
2220 Spinal Nerves. Connections and Functions of Roots. Spinal Ganglia. Peripheral Distribution.
2280 Pathological Conditions.
2290 Action of Chemical and Physical Agents.

2300 **The Ganglionic Nervous System. (Including Sympathetic System.)**

2310 General Anatomy and Development of Ganglionic Nerves.
2330 General Functions of Nervous System.
2340 Ganglionic Nerve Supply to Head and Neck.
2341 Ganglionic Nerve Supply to Thorax.
2342 Ganglionic Nerve Supply to Abdomen.
2343 Ganglionic Supply to Pelvis.
2344 Ganglionic Nerve Supply to Anterior Limb.
2345 Ganglionic Nerve Supply to Posterior Limb.
2346 Ganglionic Nerve Supply to Skin and its Appendages
2380 Pathological Conditions.
2390 Action of Physical and Chemical Agents.

2400 **Spinal Cord.**

2405 General.
2410 Anatomy and Development.
2415 Tracts connecting Cord with higher parts of the Nervous System.
2430 Functions.
2431 Reflex Actions. Localisation of, etc.
2432 Tonus. Tendon Phenomena.
2433 Control of Skeletal Muscles.
2434 Purposive Reactions, and relation to Psychical Events.
2435 Relation to Sensations.
2436 Relation to Willed Movements.
2437 Conduction in Cord.
2438 Relations with Ganglionic Nervous System of Head and Neck, Thorax, Abdomen, Pelvis, and Skin.
2439 Vascular Control.
2480 Pathological Conditions.
2490 Action of Physical and Chemical Agents.

2500 **Medulla Oblongata (Bulb).**

2510 The Bulbo-Spinal Animal.
2520 Conduction in Bulb.
2530 Inferior Olivary System.
2540 Dorsal Column Nuclei.
2550 Centres in.
2580 Pathological Conditions.
2590 Action of Physical and Chemical Agents.

2600 **Mid Brain. Corpora Quadrigemina. Corpora Geniculata.**

2700 **Cerebellum.**

2705 General.
2710 Structure and Development.
2730 Connections of Cerebellum with other Parts of Nervous System.
2740 Functions of Cerebellum.
2780 Pathological Conditions.
2790 Action of Physical and Chemical Agents.

2800 **Cerebral Hemispheres.**

2805 General.
2810 Structure and Development.
2830 Tracts Connecting with Other Parts of Nervous System. (Projection Systems.)
2835 Tracts of Association and Commissures.
2840 Functions.
2850 Localisation of Functions.
2851 Motor Functions.
2852 Sensory Functions.
2853 Aphasia, Agraphia and Allied Disorders. Physiology of Speech.
2854 Action on Viscera.
2855 Thermal, Trophic, and other Functions.
2860 Intellectual Functions. Volitions. Emotions.
2870 Sleep. Hypnotic conditions. Catalepsy, etc.
2880 Pathological Conditions.
2890 Actions of Physical and Chemical Agents.

2900 **Nutritive and Protective Mechanisms of Central Nervous System.**

2910 Membranes and Protective Structures of Brain and Cord.
2930 Circulation.
2940 Cerebro-Spinal Fluid.
2950 Cerebral Pressure.
2980 Pathological Conditions. Concussion. Compression.
2985 Ischæmia. Hæmorrhage, etc.
2990 Action of Physical and Chemical Agents.

THE SENSES.

3000 **Sensation in General.**

3010 The Weber-Fechner Law.
3020 Specific Nerve Energy.
3030 Sensations.
3031 Classification and Analysis of.
3032 General Sensibility.
3033 Pain and Hyperæsthesia.
3035 Other Sensations (*e.g.*, Visceral Sensations, etc.).
3039 Synæsthesia (Colour-Hearing, etc.). Mutual Influence of Sensations on one another.
3080 General Pathological Characters of Disordered Sensation.
3081 Anæsthesia.
3082 Illusions and Hallucinations.
3090 Action of Physical and Chemical Agents.

3100 **Cutaneous Senses.**

3105 General.
3110 Structure, Development, and Distribution of End Organs.
3130 The Sense of Pressure and Touch.
3140 The Sense of Temperature.
3150 Localisation.
3170 The Tactile Sense in Invertebrata.
3180 Pathological Conditions.
3190 Action of Physical and Chemical Agents.

3200 **Sense of Movement.**

3205 General.
3210 Structure, Development, and Distribution of End Organs in Motor Apparatus.
3230 Sensations of Active and Passive Movements. Sense of Effort.
3250 Fatigue.
3280 Pathological Conditions.
3290 Action of Physical and Chemical Agents.

3300 **Taste.**

3305 General.
3310 Structure, Development, and Distribution of Peripheral Organs.
3330 Taste Sensations.
3370 The Taste Sense in Invertebrata.
3380 Pathological Conditions.
3390 Action of Physical and Chemical Agents.

3400 **Smell.**

3405 General.
3410 Structure, Development, and Distribution of Peripheral Organs.
3430 Smell Sensations.
3470 The Sense of Smell in Invertebrata.
3475 The Chemical Sense of Aquatic Animals.
3480 Pathological Conditions.
3490 Action of Physical and Chemical Agents.

3500 **Hearing.**

3505 General.
3510 Structure and Development of Peripheral Organs.
3520 Functions of the Various Parts of the Organ of Hearing in the External, the Middle, and the Internal Ear.
3530 Sensations of Sound.
3535 Limits of Audition dependent on Intensity and Pitch.
3540 The Modifications of Vibrations in Transit through the Ear.
3545 Musical Tones and Noises. (Combination Tones.)
3550 Auditory Localisation.
3570 The Sense of Hearing in Invertebrata.
3580 Pathological Conditions.
3585 Deaf-Mutism.
3590 Action of Physical and Chemical Agents.

3600 **The Labyrinthine Sense. Equilibration.**

3605 General.
3610 Structure and Development of the Labyrinth.
3630 The Labyrinthine Sense.
3635 Function of Otoliths.
3660 Analogous Senses in Lower Vertebrata (*e.g.* Sensations from the Lateral Line in Fishes).
3670 Analogous Senses in Invertebrata.
3680 Pathological Conditions.
3690 Action of Physical and Chemical Agents.

3700 **Vision.**

3705 General.
3710 The Eyeball.
3711 Structure, Development, and Chemical Characters of its several parts.
3712 Dioptrics. (Ophthalmometry and Errors of Refraction.)
3713 Ophthalmoscopy and Skiascopy.
3714 Entoptic Phenomena.
3715 Accommodation.
3716 Iris Movements.
3717 Circulation of Blood and Lymph in the Eyeball.

3720 Structure and Functions of Accessory Parts of the Eyeball. (Lachrymal Gland, etc.)
3725 Movements of Eyeball.
3730 Retinal Functions.
3731 Physiological Retinal Processes. (Changes in Visual Purple, Electrical Conditions, etc.)
3732 Light and Colour Sensations. (Visual Acuity.)
3733 Functions of Regions of Retina.
3734 Alterations of Retinal Excitability. (Adaptation. After-Images, Contrast, Fatigue.)
3735 Duration of Stimulus and Sensation. (Persistence, Flicker, Recurrent Image.)
3736 Intensity. (Photometry, Purkinje's Phenomenon, Weber's Law.)
3737 Colour Blindness.
3738 Electrical and Mechanical Excitation.
3740 Binocular Vision.
3750 Visual Localisation.
3751 Perception of Form, Solidity and Size.
3752 Perception of Movement.
3753 Visual Illusions.
3770 Organs of Sight and Sense of Vision in Invertebrata.
3780 Pathological Conditions.
3790 Action of Physical and Chemical Agents.

MUSCLE. NERVE. ELECTRO-PHYSIOLOGY.

4000 **Muscle.**

(Under each heading in this group are included :—
·1. Skeletal Striated Muscle.
·2. Cardiac Muscle.
·3. Unstriated or Involuntary Muscle.
·4. Muscle of Invertebrata.)

4005 General.
4006 Theories of Muscular Activity.
4007 Sources of Muscular Energy.
4010 Structure and Development.
4015 Mode of Termination of Nerves.
4020 Physical Characters.
4021 Mechanical. (Elasticity, etc.)
4022 Optical Phenomena.
4025 Chemical Characters.
4030 Contraction of Muscle.
4031 Myography.
4032 Chemical Changes during.
4033 Performance of Work.
4034 Production of Heat.
4035 Fatigue.

4040 Excitation and Excitability.
4044 Conduction of Excitatory Process.
4045 Automatic and Rhythmic Activity.
4046 Peristalsis.
4050 Rigor Mortis.
4060 Functions of Motor Nerve Endings.
4062 Voluntary Contraction.
4065 Inhibition.
4080 Pathological Conditions.
4090 Action of Chemical and Physical Agents.
(Electromotive Phenomena and Polarisation of Muscle are catalogued under Electro-Physiology. See No. 4510.)

4100 **Special Motor Mechanisms.**

4105 General.
4130 Locomotion.
4140 Larynx.
4141 Voice Production.
4142 Speech.
4145 Production of Sound other than by Larynx.
4150 Other Movements.
4151 Prehensile.
4152 Writing.
4153 Expression of Emotions.
4180 Pathological Conditions.
4190 Action of Physical and Chemical Agents.

4200 **Nerve.**

4205 General.
4210 Structure and Development.
4215 Nutrition. (Degeneration, Regeneration, etc.)
4220 Physical Characters.
4225 Chemical Characters.
4230 Activity of Nerve.
4235 Fatigue.
4240 Excitation and Excitability.
4244 Conduction of Excitatory Process.
4270 Nerves of Invertebrata.
4280 Pathological Conditions.
4290 Action of Physical and Chemical Agents.
(Electromotive Phenomena and Polarisation of Nerve are catalogued under Electro-Physiology. See No. 4520.)

4500 **Electro-Physiology.**

4505 General.
4510 Muscle. (·1, ·2, ·3, ·4, as explained under Muscle.)
General.

4512 Electromotive Phenomena.
4515 Polarisation.
4516 Electrotonus.
4520 Nerve.
4521 General. (Physical Analogies, Kernleiter Model, etc.)
4522 Electromotive Phenomena.
4525 Polarisation.
4526 Electrotonus.
4530 Spinal Cord and Brain.
4540 Sense Organs.
4541 Retina.
4550 Glands.
4551 Skin.
4560 Electrical Organs.
4561 Structure and Development.
4562 Chemical Characters.
4563 Functions.
4570 Plants.
4580 Undifferentiated Protoplasm.

THE BLOOD AND THE CIRCULATORY SYSTEM.

5000 **The Blood as a Whole.**

5005 General.
5006 Quantity.
5020 General Physical Characters.
5025 General Chemical Characters.
5028 Enzymes of Blood.
Gases. (See Respiration, No. 6220.)
5030 General Physiological Characters.
5040 Clotting.
5050 Hæmorrhage and Plethora. Transfusion.
5070 The Blood of Invertebrata.
5080 Pathological Conditions.
5090 Action of Physical and Chemical Agents.

5100 **The Red Corpuscles.**

5105 General.
5106 Number.
5110 Structure and Development.
5120 Physical Characters.
5125 Chemical Characters.
5126 Origin and Destruction of Hæmoglobin. (For Chemistry of Hæmoglobin, see No. 1155.)
5130 Functions.
5180 Pathological Conditions.
5190 Action of Physical and Chemical Agents.

5200 **The White Corpuscles.**

5205 General.
5206 Number.
5208 Leucocytosis.
5210 Structure and Development.
5220 Physical Characters.
5225 Chemical Characters.
5230 Functions of.
5280 Pathological Conditions.
5290 Action of Physical and Chemical Agents.

5300 **Blood Platelets and Formed Elements Other than Red and White Corpuscles.**

5400 **Blood Plasma.**

5405 General.
5420 Physical Characters.
5425 Chemical Composition.
5430 Physiological Features. (See also Clotting of the Blood, No. 5040.)

5450 **Blood Serum.**

5455 General.
5470 Physical Characters.
5475 Chemical Composition.
5480 Physiological Features. (*e.g.*, Globulicidal and Bactericidal Functions.)

5500 **Circulation of the Blood in General.**

5505 General.
5530 Mechanical Principles of the Circulation.
5531 Blood-pressure.
5532 Velocity of Blood Flow.
5533 Circulation Time.
5534 The Pulse.
5535 Effect of Gravity.
5536 Effect of the Respiratory Movements.
5540 The Circulation in Special Regions and Organs.
5570 The Circulation in the Different Classes of the Animal Kingdom.

5600 **The Heart.** (The Heart as Muscular Tissue is considered under Muscle.)

5605 General.
5610 Structure and Development.
5620 Physical Features of the Heart and Heart-beat.
5621 General Changes in Form. Apex-beat, etc.

5622 Pericardium
5623 Heart-volume and Output.
5624 Endocardial Pressure.
5625 Work Performed by the Heart.
5626 Heart Sounds.
5630 General Physiological Features of the Heart.
5631 Rhythm.
5632 Excitation.
5633 Propagation of the Excitatory Process.
5634 Nutrition and Blood Supply.
5660 Innervation.
5661 Action of Vagus.
5662 Action of Sympathetic.
5663 Afferent Nerves.
5664 Cardiac Reflexes.
5670 The Heart in Invertebrata.
5680 Pathological Conditions.
5681 Failure of Compensation.
5687 Influence of Asphyxia.
5690 Action of Physical and Chemical Agents.

5700 **The Blood Vessels.**

5705 General.
5710 Structure and Development.
5720 Physical Properties.
5730 Physiological Properties.
5735 Diapedesis.
5736 Inflammation.
5760 Innervation.
5761 Vaso-motor Nerves.
5764 Vaso-motor Reflexes.
5765 Vascular Tone.
5770 Blood Vessels of Invertebrata.
5780 Pathological Conditions.
5790 Action of Physical and Chemical Agents.

5800 **Lymphoid Structures. Lymph and Allied Fluids.**

5805 General.
5810 Structure and Development.
5811 Formed Elements of Lymph.
5812 Lymphoid Tissue.
5813 Lymphatic Hearts and Vessels.
5814 Serous Membranes.
5825 Composition.
5827 Lymph Glands.
5828 Lymph and Chyle.
5830 Formation of Lymph.

5840 Physiological Features.
5841 Coagulation.
5843 Functions.
5845 Absorption from Alimentary Canal.
5846 Absorption from Serous Cavities and Connective Tissues.
5850 Movements of Lymph.
5853 Physiological Features (including Innervation) of Lymph Hearts and Vessels.
5880 Pathological Conditions of Lymph and Lymphatic Tissues.
5885 Pus.
5890 Action of Physical and Chemical Agents.

5900 **Synovia and Synovial Membranes.**

RESPIRATION. ANIMAL HEAT.

6000 **Respiration in General.**
6005 General.
6010 Structure, Development and Physical and Chemical Features of Respiratory Organs.
6011 In Air-Breathing Vertebrata.
6014 In Aquatic Vertebrata.
6017 In Invertebrata.
6020 Chemistry of the Air and other Respiratory Media.
6024 Impurities.
6026 Ventilation, etc.

6100 **Neuro-Muscular Mechanism of Pulmonary Movements.**
6105 General.
6106 Rhythm.
6120 Mechanism.
6160 Influence of Nervous System.
6165 Alterations of Rhythm. (Apnœa, Cheyne-Stokes Respiration, etc.).
6180 Pathological Conditions.
6185 Asphyxia.
6190 Action of Physical and Chemical Agents.

6200 **General Chemical Features of Pulmonary Respiration.**
6205 General.
6210 The Gases in the Lungs.
6220 The Gases in the Blood.
6225 Effect of altered conditions on Amount and Tension of Blood Gases.

6230 Mechanism of the Gaseous Exchanges in the Lungs.
6235 The Gases expired.
6240 The Gases in the Tissues, Animal Fluids, etc.
6250 Internal Respiration.
6260 Total Respiratory Exchanges.
6265 Effect of Various Conditions on the Total Exchange. (Food, Exercise, Drugs, Disease, etc.)

6300 **Physiology of the Respiratory Passages.**

6305 General.
6310 Structure and Development.
6320 Physical and Chemical Properties.
6330 Movements.
6340 Secretion.
6380 Pathological Conditions.
6390 Action of Physical and Chemical Agents.

6500 **Physiology of Other Forms of Respiration.**

6510 Branchial Respiration.
6520 Tracheal Respiration.
6590 Other Modes of Respiration.

6600 **Physiology of Organs Related to Respiratory Mechanism.**

6610 Air Sacs of Birds.
6620 Swimming Bladder of Fishes.
6690 Other Organs.

6900 **Animal Heat.**

6905 General.
6910 Physical and Physiological Heat-Values of Articles of Diet.
6920 Production of Heat.
6930 Loss of Heat.
6940 Regulation of Temperature.
6945 Diurnal Variations.
6950 Hibernation.
6970 Differences between Warm-Blooded and Cold-Blooded Animals.
6980 Disturbances of the Heat Regulating Mechanism.
6981 Fever.
6990 Action of Physical and Chemical Agents.

DIGESTION, ABSORPTION, METABOLISM.

7000 **General.**

7010 Results of Extirpation of Portions of the Canal. Colotomy, etc.
7020 Reaction of the Contents.
7030 Natural as Compared to Artificial Digestion.

7040 Excretion in the Canal.
7050 Micro-Organisms in the Canal.
7070 Structure and Functions of the Digestive Organs in the Invertebrata.
7090 Action of Physical and Chemical Agents.

7100 **Mouth, Pharynx and Œsophagus.**

7110 Structure and Development.
7120 Physical and Chemical Properties.
7160 Neuro-Muscular Mechanisms.
7180 Pathological Conditions.
7190 Action of Physical and Chemical Agents.

7200 **The Salivary Glands.**

7210 Structure and Development.
7225 Chemistry.
7230 Saliva. Composition. Action.
7240 Physiology of the Secretion of Saliva.
7280 Pathological Conditions.
7290 Action of Physical and Chemical Agents.

7300 **The Stomach.**

7310 Structure and Development.
7325 Chemical Composition.
7330 Gastric Juice. Composition. Action.
7340 Physiology of the Secretion of the Gastric Juice.
7350 Chemical and Physical Changes of the Food in the Stomach.
7360 Neuro-Muscular Mechanisms of the Stomach.
7365 Vomiting.
7366 Rumination.
7380 Pathological Conditions.
7390 Action of Physical and Chemical Agents.

7400 **The Small and Large Intestines.**

7410 Structure and Development.
7425 Chemistry.
7430 Secretions. Composition. Action.
7450 Physical and Chemical Changes of the Food in the Intestines.
7460 Neuro-Muscular Mechanisms.
7480 Pathological Conditions.
7490 Action of Physical and Chemical Agents.

7500 **The Pancreas.**

7510 Structure and Development.
7525 Chemistry.
7530 Pancreatic Juice. Composition. Action.
7540 Physiology of the Secretion of the Pancreatic Juice.
7545 Extirpation of the Pancreas.
7580 Pathological Conditions.
7590 Action of Physical and Chemical Agents.

7600 **The Liver.**

7610 Structure and Development.
7625 Chemical Composition.
7630 Bile. Composition. Action.
7631 Gall-Bladder and Ducts.
7633 Physiology of the Secretion of Bile.
7640 Metabolic Functions of the Liver.
7641 Formation of Urea and Uric Acid.
7642 Glycogenic Function.
7643 Action on Hæmoglobin.
7650 Enzymes of the Liver.
7655 Antitoxic Functions.
7660 Innervation.
7680 Pathological Conditions.
7685 Jaundice.
7690 Action of Physical and Chemical Agents.

7700 **Absorption.**

7710 Mechanism of Absorption.
7720 Absorption of Individual Proximate Principles.
7730 Absorption in the Mouth.
7740 Absorption in the Stomach.
7750 Absorption in the Small Intestine.
7760 Absorption in the Large Intestine.
7770 Absorption in Invertebrata.
7780 Absorption in Disease.
7790 Action of Physical and Chemical Agents.

7800 **The Ductless Glands.**

7810 The Spleen.
7811 Structure and Development.
7812 Chemistry.
7813 Functions.
7816 Neuro-Muscular Mechanism.
7818 Pathological Conditions.
7819 Action of Physical and Chemical Agents.
7820 The Thyroid and Parathyroid.
7821 Structure and Development.

7822 Chemistry.
7823 Functions.
7828 Pathological Conditions.
7829 Action of Physical and Chemical Agents.
7830 The Thymus.
7831 Structure and Development.
7832 Chemistry.
7833 Functions.
7838 Pathological Conditions.
7839 Action of Physical and Chemical Agents.
7840 The Suprarenal.
7841 Structure and Development.
7842 Chemistry.
7843 Functions.
7848 Pathological Conditions.
7849 Action of Physical and Chemical Agents.
7850 The Pineal Gland.
7860 The Pituitary Body.

7900 **Metabolism.**

7910 General.
7911 Body Weight. Weights of Organs and Tissues.
7912 Comparison of Ingesta and Egesta.
7913 Deprivation of Food, Partial and Complete.
7914 Effect of Intrinsic Factors. (Age, Sex, etc.)
7915 Mutual Influences of Proteid, Fat and Carbohydrate Metabolism.
7916 Effect of Extirpation of various Organs on Metabolism.
7918 General Metabolism in Disease.
7919 Effect of Physical and Chemical Agents.
Temperature.
Light.
Extracts of Animal Organs.
7920 Nitrogenous Metabolism.
7921 Assimilation.
Utilisation of Gelatin.
7922 Dissimilation.
7923 Formation of Urea.
7924 Formation of Uric Acid.
7925 Influence of Diet.
7926 Influence of Work.
7928 In Disease.
7929 Influence of Physical and Chemical Agents.
7930 Cabohydrate Metabolism.
7931 Assimilation. (Including Glycogen Formation.)
7932 Dissimilation.
7936 Influence of Work.

7938 In Disease.
Diabetes and Glycosuria.
7939 Influence of Physical and Chemical Agents.
7940 Fat Metabolism.
7950 Relation of Oxygen to Metabolic Processes.
7951 Mechanism of Oxidation and Reduction in Tissues.
7955 Respiratory Quotient, effect of various factors on.
Metabolism of :—
7960 Iron.
7961 Calcium.
7962 Phosphorus.
7963 Sulphur.
7969 Other Substances.
7990 Fate of Substances other than ordinary Food-stuffs in the Body (see also Pharmacology).
7991 Nitrogenous.
7992 Non-nitrogenous. (Fatty, Aromatic, etc.)
7993 Inorganic.

THE URINARY APPARATUS. THE SKIN.

8000 **The Kidney.**
8005 General.
8010 Structure and Development.
8020 Physical and Chemical Properties.
8030 Physiology of the Secretion of Urine.
8031 Secretion of Water and Salts.
8032 Secretion of Specific Urinary Constituents.
8033 Secretion of Foreign Substances.
8040 Metabolic Functions.
8060 Innervation.
8080 Pathological Conditions.
8085 Uræmia.
8090 Action of Physical and Chemical Agents.

8100 **The Neuro-Muscular Mechanism of the Urinary Apparatus.**
8110 The Ureters.
8120 The Bladder.
8130 The Urethra and Penis.
8180 Pathological Conditions.
8190 Action of Physical and Chemical Substances.

8200 **The Renal Apparatus of the Invertebrata.**

8300 **The Urine.**
8305 General. (Quantity, Reaction, etc.)
8306 General Composition. (Total Nitrogen, etc.)

8307 Toxicity of Urine.
8308 Action of Micro-organisms.
8310 Individual Constituents.
The subjects treated of here under the head of each constituent are:—
·1. Quantity and Variations in Quantity.
·2. Detection and Estimation of, in the Urine.
·3. Formation in the Body (see also Metabolism).
(For the chemical characters of the various Urinary constituents, see Physiological Chemistry.)
8311 Urea.
8312 Carbamic Acid and Ammonia.
8313 Uric Acid.
8314 Alloxuric Bodies.
8315 Creatinine, Creatine and Allied Substances.
8316 Thio-cyanic Acid.
8317 Aromatic Substances.
8318 Hippuric Acid.
8319 Ethereal Sulphates.
8320 Fatty Acids.
8321 Carbohydrates.
8330 Mucin and Proteids.
8332 Pigments.
8335 Enzymes.
8340 Inorganic constituents.
8360 Special features of the Urine in various types of the Vertebrata.
8370 Renal Excretion in Invertebrata.

8400 **Abnormal and Pathological Urine.**

8405 General.
8410 Deposits and Calculi.
8420 Blood.
8430 Bile.
8435 Abnormal Pigments other than those of Blood and Bile.
8440 Proteids.
8450 Carbohydrates.
8455 Glycuronic Acid.
7457 Other Abnormal Substances in Diabetic Urine.
8460 Fats.
8470 Pus.
8480 Alcaptonuria.
8485 Alkaloids.
8390 Other Abnormal Conditions of the Urine.
8491 Constituents appearing after the Administration of Foreign Substances.

8600 **The Skin and its Appendages.**

8605 General.
8610 Structure and Development.
8620 Physical and Chemical Features.
8630 Functions.
8631 Protective.
8632 Respiratory.
8633 Absorptive.
8634 Secretive.
8635 Sweat.
8636 Chromatic Functions.
8660 Innervation.
8661 Of Sweat Glands.
8662 Of Hair Muscles.
(For Trophic and Sensory Nerves, see Nervous System and Special Senses. Nos. 2070, 3100.)
8670 The Skin and its Appendages in Invertebrata.
8680 Pathological Conditions.
1690 Action of Physical and Chemical Agents.

8700 **Miscellaneous Glandular Organs not included in the foregoing Classification.**

8710 Venom Glands. Structure. Development, and Mechanism. (For Venins see Toxins.)
8790 Other Glands. (*e.g.*, Ink Gland of Cephalopods, etc.)

THE ACTION OF CHEMICAL SUBSTANCES ON THE ANIMAL BODY. PHARMACOLOGY.

9000 **General,**

9010 Relation between Chemical Structure and Physiological Action.
9050 Antagonism.

9100 **Individual Chemical Substances and Remedial Agents.**

9110 Water.
9115 Elements and Inorganic Compounds. (Arranged under Active Elements.)
9120 The Non-Nitrogenous Compounds of the Fatty Series.
9125 The Non-Nitrogenous Compounds of the Aromatic Series.
9130 Alkaloids.
9140 Proteids and Albuminoids.

9150 Toxins.
9155 Antitoxins.
9160 Enzymes.
9170 Fluids and Substances obtained from the Animal Body. (Bile, Serum, etc.)
9175 Extracts of Animal Organs.
9180 Other Nitrogenous Compounds.
9190 Vegetable and Animal Preparations of Undefined Composition.

(The substances under each of the preceding groups will be taken alphabetically. The physiological and curative action of drugs or groups of drugs on various organs, and on physiological processes, are already treated in the foregoing classification of the functions of the body.)

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PSYCHOLOGICAL ADDITIONS TO PHYSIOLOGY.

Differs from Physiology Schedule only in having *Psychological Entries* inserted in pp. 7–11.

2400 **Spinal Cord.**

2405 General.
2410 Anatomy and Development.
2415 Tracts connecting Cord with higher parts of the Nervous System.
2430 Functions.
2431 Reflex Actions. Localisation of, etc.
2432 Tonus. Tendon Phenomena.
2433 Control of Skeletal Muscles.
2434 Purposive Reactions, and relation to Psychical Events.
2435 Relation to Sensations.
2436 Relation to Willed Movements.
2437 Conduction in Cord.
2438 Relations with Ganglionic Nervous System of Head and Neck, Thorax, Abdomen, Pelvis, and Skin.
2439 Vascular Control.
2480 Pathological Conditions.
2490 Action of Physical and Chemical Agents.

2500 **Medulla Oblongata (Bulb).**

2510 The Bulbo-Spinal Animal.
2520 Conduction in Bulb.
2530 Inferior Olivary System.
2540 Dorsal Column Nuclei.
2550 Centres in.
2580 Pathological Conditions.
2590 Action of Physical and Chemical Agents.

2600 **Mid Brain. Corpora Quadrigemina. Corpora Geniculata.**

2650 **Cerebellum.**

2655 General.
2660 Structure and Development.
2665 Connections of Cerebellum with other Parts of Nervous System.
2670 Functions of Cerebellum.
2680 Pathological Conditions.
2690 Action of Physical and Chemical Agents.

2700 **Cerebral Hemispheres.**

2705 General.
2710 Structure and Development.
2730 Tracts Connecting with Other Parts of Nervous System. (Projection Systems.)
2735 Tracts of Association and Commissures.
2740 Functions.
2750 Localisation of Functions.
2751 Motor Functions.
2752 Sensory Functions.
2753 Aphasia, Agraphia and Allied Disorders. Physiology of Speech.
2754 Action on Viscera.
2755 Thermal, Trophic, and Other Functions.
2780 Time Relations of Central Processes.
2790 Mental Imagery.
2800 Association of Ideas.
2810 Memory.
2820 Pleasure and Pain, their Expressions.
2830 Emotions, their Expressions.
2840 Attention and Volition.
2850 Consciousness, Subconsciousness, and Unconsciousness.
2860 Mental Fatigue and Practice.
2870 Sleep. Hypnotic Conditions. Catalepsy, etc.
2875 Instinct.
2880 Pathological Conditions.
2890 Actions of Physical and Chemical Agents.

2900 **Nutritive and Protective Mechanisms of Central Nervous System.**

2910 Membranes and Protective Structures of Brain and Cord.
2930 Circulation.
2940 Cerebro-Spinal Fluid.
2950 Cerebral Pressure.
2980 Pathological Conditions. Concussion. Compression.
2985 Ischæmia. Hæmorrhage, etc.
2990 Action of Physical and Chemical Agents.

THE SENSES.

3000 **Sensation in General.**

3010 The Weber-Fechner Law.
3020 Specific Nerve Energy.
3030 Sensations.
3031 Classification and Analysis of.
3032 General Sensibility.
3033 Sensory Fatigue.
3034 Fusion of Sensations.
3035 Pain and Hyperæsthesia.
3038 Other Sensations (*e.g.*, Visceral Sensations, etc.).
3039 Synæsthesia (Colour-Hearing, etc.). Mutual Influence of Sensations on one another.
3040 Individual and Racial Differences of Sensations in Man.
3045 Sensations of Animals.
3050 Perceptual Processes.
3060 General Perception of Space.
3065 Perception of Time.
3080 General Pathological Characters of Disordered Sensation.
3081 Anæsthesia.
3082 Illusions and Hallucinations.
3090 Action of Physical and Chemical Agents.

3100 **Cutaneous Senses.**

3105 General.
3110 Structure, Develpoment, and Distribution of End Organs.
3130 The Sense of Pressure and Touch.
3140 The Sense of Temperature.
3150 Localisation.
3160 Tactile Space Perception.
3170 The Tactile Sense in Invertebrata.
3180 Pathological Conditions.
3190 Action of Physical and Chemical Agents.

3200 **Sense of Movement.**

3205 General.
3210 Structure, Development, and Distribution of End Organs in Motor Apparatus.
3230 Sensations of Active and Passive Movements. Sense of Effort.
3250 Fatigue.
3280 Pathological Conditions.
3290 Action of Physical and Chemical Agents.

3300 **Taste.**

3305 General.
3310 Structure, Development, and Distribution of Peripheral Organs.
3330 Taste Sensations.
3370 The Taste Sense in Invertebrata.
3380 Pathological Conditions.
3390 Action of Physical and Chemical Agents.

3400 **Smell.**

3405 General.
3410 Structure, Development, and Distribution of Peripheral Organs.
3430 Smell Sensations.
3470 The Sense of Smell in Invertebrata.
3475 The Chemical Sense of Aquatic Animals.
3480 Pathological Conditions.
3490 Action of Physical and Chemical Agents.

3500 **Hearing.**

3505 General.
3510 Structure and Development of Peripheral Organs.
3520 Functions of the Various Parts of the Organ of Hearing in the External, the Middle, and the Internal Ear.
3530 Sensations of Sound.
3533 Limits of Audition dependent on Intensity and Pitch.
3535 The Modifications of Vibrations in Transit through the Ear.
3540 Musical Tones and Noises.
3545 Fusion of Tones. (Combination Tones.)
3550 Concord and Discord.
3555 Rhythm.
3557 Melody.
3560 Auditory Localisation.
3570 The Sense of Hearing in Invertebrata.
3580 Pathological Conditions.
3585 Deaf-Mutism.
3590 Action of Physical and Chemical Agents.

3600 **The Labyrinthine Sense. Equilibration.**

3605 General.
3610 Structure and Development of the Labyrinth.
3630 The Labyrinthine Sense.
3635 Function of Otoliths
3660 Analogous Senses in Lower Vertebrata (*e.g.* Sensations from the Lateral Line in Fishes).
3670 Analogous Senses in Invertebrata.
3680 Pathological Conditions.
3690 Action of Physical and Chemical Agents.

3700 **Vision.**

3705 General.
3710 The Eyeball.
3711 Structure, Development, and Chemical Characters of its several parts.
3712 Dioptrics. (Ophthalmometry and Errors of Refraction.)
3713 Ophthalmoscopy and Skiascopy.
3715 Accommodation.
3716 Iris Movements.
3717 Circulation of Blood and Lymph in the Eyeball.
3720 Structure and Functions of Accessory parts of the Eyeball. (Lachrymal Gland, etc.)
3725 Retinal Functions.
3726 Physiological Retinal Processes. (Changes in Visual Purple, Electrical Conditions, etc.)
3728 Visual Acuity.
3730 Light and Colour Sensations.
3731 Functions of Regions of Retina.
3732 Alterations of Retinal Excitability. (Adaptation. After-Images, Contrast, Fatigue.)
3733 Duration of Stimulus and Sensation. (Persistence, Flicker, Recurrent Image.)
3734 Intensity. (Photometry, Purkinje's Phenomenon, Weber's Law.)
3735 Colour Blindness.
3738 Electrical and Mechanical Excitation.
3739 Entoptic Phenomena.
3740 Movements of Eyeball.
3745 Binocular Vision.
3748 Visual Localisation.
3750 Visual Space Perception.
3751 Perception of Form, Solidity and Size.
3752 Perception of Movement.
3755 Visual Illusions.
3770 Organs of Sight and Sense of Vision in Invertebrata.
3780 Pathological Conditions.
3790 Action of Physical and Chemical Agents.

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(R.) BACTERIOLOGY (INCLUDING YEASTS, MOULDS, AND PATHOGENIC PROTOZOA).

GENERAL.

0000 Philosophy.
0010 History. Biography.
0020 Bibliography.
0025 Text-Books, General Treatises.
0030 Dictionaries, Catalogues, Tables of Constants, General Classifications.
0035 Periodicals. Reports of Societies, Congresses, Observatories, Laboratories, etc.
0040 Collective Works, Fauna and Flora.
0045 Addresses, Lectures, Essays.
0050 Pedagogy.
0060 Institutions, Museums, Collections, etc. Economics.
0070 Nomenclature (including Rules of Nomenclature, Transliteration, etc.).

METHODS AND APPARATUS.

0100 General.
0150 Culture Methods.
0200 Sterilisation.
0250 Microscopic Methods.
0300 Staining.
0350 Apparatus and instruments.

GENERAL BACTERIOLOGY.

Morphology.

0500 General.
0520 Form.
0540 Structure.
0560 Spores.
0580 Flagella.

Classification.

1000 Classificatory characters.
1050 Systems.
1100 Bacteria.
1150 Other vegetable organisms.
1200 Protozoa.

Physiology.

1500 Movements.
1550 Growth.
1600 Nutrition.
1650 Relation to environment.
1700 Effects of Temperature.
1720 Effects of Light.
1800 Aerobism, Anaerobism.
1820 Action on Non-nitrogenous Substances; Fermentation.
1900 Action on Nitrogenous Substances; Putrefaction.
2000 Oxidation, Nitrification, Denitrification, Fixation of Nitrogen.
2100 Composition and Products of Metabolism.
2200 Toxines, Antitoxines.
2250 Symbiosis, Antagonism.

SPECIAL BACTERIOLOGY.

Bacteria, etc., in Relation to Non-living Surroundings.

2500 Air.
2520 Water.
2540 Soils.
2580 Aliments.
2590 Meat, Bread.
2600 Milk, Products of Milk.
2610 Beer, Wine.
2620 Other articles of Food.
2700 Trade, not alimentary.
2720 Tanning.
2740 Dyeing.
2800 Dwellings.
2900 Sewage.

Bacteria in Relation to Higher Organisms.

Bacteria not known to be Pathogenic.

3000 General.

Pathogenic Bacteria.

3050 General.
3100 Pathogenic Action.

Immunity.

3200 General.
3250 Natural Immunity.
3300 Immunization.
3350 Natural.
3400 Artificial (Curative and Preventative).
3420 By Bacteria and their Products.
3440 By Chemical Substances (incl. Extracts of Organs).
3460 By Serum.
3500 Accompanying Phenomena.
3550 Leucocytosis.
3600 Serum Reactions.
3650 Agglutination.
3700 Bacteriolysis.
3900 Disinfection.

Infectious Diseases: General.

4000 General.
4040 Malarial diseases.
4060 Exanthemata.
4080 Smallpox.
4100 Varicella.
4120 Measles.
4140 Rubella.
4160 Scarlatina.
4180 Miliary Fever.
4200 Typhus.
4220 Cholera.
4240 Typhoid.
4260 Dysentery.
4280 Plague.
4300 Yellow Fever.
4320 Wound infection diseases.
4340 Suppuration.
4360 Phlegmon.
4380 Erysipelas.
4400 Pyæmia.
4420 Septicæmia.

4440 Gangrene.
4460 Tetanus.
4480 Diseases of the Puerperium.
4500 Infectious Tumours.
4520 Leprosy.
4540 Tuberculosis.
4560 Lupus.
4580 Scrophula.
4600 Syphilis (and other Venereal diseases).
4620 Diphtheria.
4640 Influenza.
4660 Pertussis.
4680 Recurrent Fever.
4700 Pellagra.
4720 Beri-beri.
4740 Rheumatism.
5500 Other infectious general diseases.

Infectious Diseases: Local.

6000 General.
6050 Skin.
6100 Muscles, Skeleton, etc.
6150 Nervous System.
6200 Respiratory Apparatus.
6250 Circulatory System.
6300 Digestive System.
6350 Urinary and Generative Systems.
6400 Eye and Ear.
6450 Other infectious local diseases.

Diseases in Different Classes of Animals.

7000 Common to Man and other Animals.
7100 Anthrax.
7200 Glanders.
7300 Rabies.
7400 Actinomycosis.
7500 Foot and Mouth Disease.
8000 Mammals other than man.
8100 Primates.
8200 Carnivora.
8300 Ungulata.
8400 Rodentia.
8700 Birds.
8750 Reptiles.
8800 Amphibia.
8850 Pisces.
8900 Invertebrata.

Diseases in Plants due to Micro-Organisms.

9000 General.
9100 Grasses and Cereals.
9200 Vegetables.
9300 Fruits.
9400 Flowering Plants.
9500 Trees and Shrubs.

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